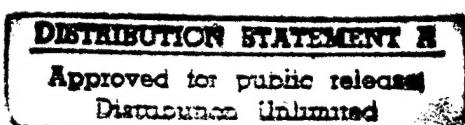


The Report of the Quadrennial Defense Review

- [The Secretary's Message](#)
 - [Section I: Design, Approach, and Implementation of the Quadrennial Defense Review](#)
 - [Section II: The Global Security Environment](#)
 - [Section III: Defense Strategy](#)
 - [Section IV: Alternative Defense Postures](#)
 - [Section V: Forces and Manpower](#)
 - [Section VI: Force Readiness](#)
 - [Section VII: Transforming U.S. Forces For the Future](#)
 - [Section VIII: Achieving a 21st Century Defense Infrastructure](#)
 - [Section IX: Defense Resources](#)
 - [Section X: Comments by the Chairman of the Joint Chiefs of Staff](#)
 - [Glossary](#)
-

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[Return to "Quadrennial Defense Review" Summary Page](#)



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THE SECRETARY'S MESSAGE

During the past decade, the world witnessed rapid and dramatic change. The Soviet empire disintegrated. The Iron Curtain dissolved. The Berlin Wall was dismantled. America no longer was engaged in a global competition with an ideological enemy. Where dictatorship once prevailed, democratic institutions now flourish and market economies are embraced by freedom-loving people throughout most of the industrial world.

The American people have much to celebrate over this turn of events, and there is every temptation to relax and take comfort in the preservation of tranquillity at home and the triumph of our values abroad. The flush of euphoria, however, must be tempered with the knowledge that while the prospect of a horrific, global war has receded, new threats and dangers - harder to define and more difficult to track - have gathered on the horizon.

It is the duty of America's policy makers to comprehend the nature of these threats and devise appropriate strategies and programs to defuse or defeat them. In carrying out this responsibility, it is important that we separate fact from fiction and antiquated assumptions from current realities.

It is a commonly held - but erroneous - notion that America's military establishment and forces are trapped hopelessly in the past, still structured and struggling to fight yesterday's wars.

As we examine how we intend to prepare America's armed forces for an uncertain future, it is important to look at how we got to where we are, and where we are going.

WHERE WE WERE

During most of the Cold War years, the United States pursued a strategy of containing the Soviet Union. In 1985, America appropriated about \$400 billion for the Department of Defense (in constant, fiscal year 1997 dollars), which constituted 28 percent of our national budget and 7 percent of our Gross National Product. We had more than 2.2 million men and women under arms, with about 500,000 overseas, 1.1 million in the Reserve forces, and 1.1 million civilians in the employment of the Department of Defense. Defense companies employed 3.7 million more and about \$120 billion of our budget went to procurement contracts.

WHERE WE ARE

Since 1985, America has responded to the vast global changes by reducing its defense budget by some 38 percent, its force structure by 33 percent, and its procurement programs by 63 percent. Today, the budget of the Department of Defense is \$250 billion, 15 percent of our national budget, and an estimated 3.2 percent of our Gross National Product. We now have 1.45 million men and women under arms, 200,000 overseas, 900,000 in the Reserves, and 800,000 civilians employed by the Department. Today, \$44 billion is devoted to the acquisition of weaponry from a smaller defense industrial base employing 2.2 million workers.

In making these reductions, we have carefully protected the readiness of our military to carry out its currently assigned missions. But it has become clear that we are failing to acquire the modern technology and systems that will be essential for our forces to successfully protect our national security interests in the future.

WHERE WE ARE GOING

Our work on the QDR followed a path that led from threat, to strategy, to implementation, and finally to resource issues.

We started with a fresh, unblinking look at the world both today and over the temporal horizon to identify the *threats, risks, and opportunities* for U.S. national security. In addition, we recognized that the world continues to change rapidly. We cannot expect to comprehend fully or predict the challenges that might emerge from the world beyond the time lines covered in normal defense planning and budgets. Our strategy accepts such uncertainties and will prepare our armed forces to deal with them.

From that analysis of the global environment, we developed an overarching *defense strategy* to deal with the world today and tomorrow, identify required military capabilities, and define the programs and policies needed to support them. Building on the President's National Security Strategy, we determined that U.S. defense strategy for the near and long term must continue to shape the strategic environment to advance U.S. interests, maintain the capability to respond to the full spectrum of threats, and prepare now for the threats and dangers of tomorrow and beyond. Underlying this strategy is the inescapable reality that as a global power with global interests to protect, the United States must continue to remain engaged with the world, diplomatically, economically, and militarily.

After developing the strategy, we anchored its implementation in the fundamentals of military power today and in the future: *quality people, ready forces, and superior organization, doctrine, and technology*. We need quality people to operate more complex technology and undertake more complex joint operations. We need ready forces in a world of sudden events that often will demand that our forces come "as you are" on a moment's notice. The information revolution is creating a Revolution in Military Affairs that will fundamentally change the way U.S. forces fight. We must exploit these and other technologies to dominate in battle. Our template for seizing on these technologies and ensuring military dominance is *Joint Vision 2010*, the plan set forth by the Chairman of the Joint Chiefs of Staff for military operations of the future.

A spectrum of feasible approaches is available to sustain our current ability to shape and respond to the world as we see it now, while preparing the future force for the world of tomorrow. The QDR examined three alternative paths that differed in where they accepted risks and emphasized investment over the near term, midterm, and long term.

One path is to focus more on current dangers and opportunities. This path does not ignore the future, but sees today's threats demanding more attention and tomorrow's threats far enough away to give us ample time to respond. This option would maintain the current force structure exactly as is. But it would also result in less investment in modernization - that is, a greater aging in major platforms, few new systems, and a delay

in fully exploiting the Revolution in Military Affairs.

Another path is to focus more on future dangers and opportunities. This path does not ignore the present, but sees greater dangers over the horizon, including the possible emergence of a regional great power. This path would devote more resources to building the future force. But to do so would also require significant reductions in the current force. This would sharply reduce our ability to shape the international environment and undermine our security commitments to our allies while potentially encouraging aggressors. And most importantly, it would erode our military capability, stress the troops, and put them at more risk in battle in the near term and midterm.

The path we have chosen strikes a balance between the present and the future, recognizing that our interests and responsibilities in the world do not permit us to choose between the two. This approach retains sufficient force structure to sustain American global leadership and meet the full range of today's requirements. At the same time, it invests in the future force with a focused modernization plan that embraces the Revolution in Military Affairs, and introduces new systems and technologies at the right pace.

This approach reallocates resources and priorities to achieve the best balance of capabilities for shaping, responding, and preparing over the full period covered by the Review. As part of that reallocation of resources, we will trim current forces - primarily in the "tail" (support structure) and modestly in the "tooth" (combat power). The result will be a force capable of carrying out today's missions with acceptable strategic risk, while allowing us to stabilize our investment program in order to achieve the future joint force capabilities described in *Joint Vision 2010*. Our plan puts us on a steady and realistically executable trajectory toward that force. We preserved funding for the next generation of systems - such as information systems, strike systems, mobility forces, and missile defense systems - that will ensure our domination of the battlespace in 2010 and beyond.

Finally, the Department's plans are *fiscally responsible*. They are built on the premise that, barring a major crisis, national defense spending is likely to remain relatively constant in the future. There is a bipartisan consensus in America to balance the federal budget by the year 2002 in order to ensure the nation's economic health, which in turn is central to our fundamental national strength and security. The direct implication of this fiscal reality is that Congress and the American people expect the Department to implement our defense program within a constrained resource environment. The fiscal reality did not drive the defense strategy we adopted, but it did affect our choices for its implementation and focused our attention on the need to reform our organization and methods of conducting business.

WHAT'S NEW?

First, the *shape-respond-prepare strategy* defined in the QDR process builds on the strategic foundation of past reviews and our experience since the end of the Cold War. We have determined that U.S. forces must be capable of fighting and winning two major theater wars nearly simultaneously. However, while the Bottom-Up Review focused primarily on that difficult task, we have also carefully evaluated other factors, including

placing greater emphasis on the continuing need to maintain continuous overseas presence in order to shape the international environment and to be better able to respond to a variety of smaller-scale contingencies and asymmetric threats.

The QDR has also placed much greater emphasis on the need to prepare now for the future, in which hostile and potentially hostile states will acquire new capabilities. This demands increased and stable investment in modernization in order to exploit the revolution in technology and to transform the force towards *Joint Vision 2010*. We must fundamentally reengineer our infrastructure and streamline our support structures by taking advantage of the Revolution in Business Affairs that has occurred in the commercial world. We must focus on the future and not the past. Only through such efforts can we realize the cost efficiencies necessary to recapitalize the force.

Second, our future force will be different in *character*. The programs we are undertaking now to exploit the potential of information technologies and leverage other advancing technological opportunities will transform warfighting. New operational concepts and organizational arrangements will enable our joint forces to achieve new levels of effectiveness across the range of conflict scenarios. We want our men and women to be the masters of any situation. In combat, we do not want a fair fight - we want capabilities that will give us a decisive advantage.

Joint Vision 2010 describes four new operational concepts. Together, they promise significant advantages in any operation or environment, something we call "full spectrum dominance." At the heart of the joint vision is information superiority - the ability to collect and distribute to U.S. forces throughout the battlefield an uninterrupted flow of information, while denying the enemy's ability to do the same.

Dominant maneuver. Having a full picture of the battlefield, advanced mobility platforms, and agile organizations, U.S. forces will be able to attack enemy weak points directly throughout the full depth of the battlefield.

Precision engagement. Precision engagement will enable U.S. forces to deliver the desired effects at the right time and place on any target. Having near real-time information about the target, a common awareness of the battlespace for responsive command and control, and the flexibility to reengage with precision, U.S. forces will be able to destroy key nodes of enemy systems at great distances with fewer munitions and less collateral damage.

Full-dimensional protection. Multiple layers of protection for U.S. forces and facilities at all levels will enable U.S. forces to maintain freedom of action during deployment, maneuver, and engagement. To achieve this goal, full-dimensional protection requires a joint architecture that is built upon information superiority and employs a full array of active and passive measures.

Focused logistics. By fusing information, logistics, and transportation technologies, U.S. forces will be able to deliver the right support at the right place on the battlefield at the right time. This will enable more effective delivery of tailored sustainment packages to the strategic, operational, and tactical echelons. The overall effect will be to reduce the amount of logistics support while ensuring a more capable combat force.

In sum, we will continue to seek the best people our nation can offer and equip them with the best technology our scientists and engineers can produce. This technology will transform the way our forces fight, ensuring they can dominate the battlefield with a decisive advantage at all times across the full spectrum of operations from peacekeeping and smaller scale contingencies to major theater war. The key to success is an integrated "system of systems" that will give them superior battlespace awareness, permitting them to dramatically reduce the fog of war.

This system of systems will integrate intelligence collection and assessment, command and control, weapons systems, and support elements. It will connect the commanders to the shooters and suppliers and make available the full range of information to both decision makers in the rear and the forces at the point of the spear.

Achieving such capabilities is not an easy task and cannot be done in one leap. It is a step-by-step process involving the development of new technologies, investment in new platforms and systems, new concepts, training and doctrine, and formation of new organizational structures. But these are not just ideas - we have already started down the road and we have tangible results.

The third new element is that our program is going to be *fiscally executable*. For the past several years our defense program has suffered from unrealized expectations with regard to modernization. Failure to address these fiscal problems would undermine our ability to execute the strategy. For a variety of reasons described in the report, projected increases in funding for modernization have continually been delayed as modernization funds migrated to operations and support accounts to pay current bills. While contingency operations have contributed to the problem, they have not been the chief cause. Failure to address these fiscal problems would undermine our ability to execute the strategy. Therefore, an important corollary to the strategy and force choices in the QDR was a focus on rebalancing our overall defense program, improving stability within that program, and fixing deficiencies within Service and Defense-wide budgets in order to ensure that modernization targets are met.

WHAT'S NEXT - HOW DO WE GET FROM HERE TO THERE?

The first and most visible aspects of our overall plan to rebalance our defense programs are necessary modest reductions in military end strength and force structure. These reductions are offset in part by enhanced capabilities of new systems and streamlined support structures. The savings that will result, combined with the program stability we can achieve from realistic expectations, will enable us to pay for the transformation of our forces required by the strategy. To preserve combat capability and readiness, the Services have targeted the reductions by streamlining infrastructure and outsourcing non-military-essential functions. The result is a balanced, flexible force that has sufficient depth to support the strategy, that matches structure to end strength so that hollowness does not set in, and that will continue to evolve toward our *Joint Vision 2010* capabilities.

Highlights of QDR decisions include:

- The Army will retain 10 active, combat-ready divisions. It will also accelerate its

Force XXI modernization plan, which will revolutionize combat capability by enhancing battlefield awareness through modern information technology. A reduction of some 15,000 active duty personnel will be carried out by deactivation, consolidation, and realignment of headquarters and support facilities to improve overall support to the combat organizations.

- The Army will also restructure its Reserve component. It will shed some combat structure that provided for strategic depth during the Cold War, but which is now excess. It will also accelerate conversion of some units from combat to combat support and combat service support roles, relieving an important warfighting shortfall and enhancing the ability to support state missions. These adjustments will result in a Reserve component end strength reduction of some 45,000 personnel.
- The Navy will retain 12 carrier battle groups and 12 amphibious ready groups, but will reduce the number of surface combatants in the fleet from 128 to 116. The reduced size of the surface fleet will be offset by newer and more capable systems now coming on line. The Navy will reduce the number of attack submarines from 73 to 50, reflecting changes in requirements. It will reduce the number of F/A-18E/F aircraft to be procured from 1000 to 548; transition to the Joint Strike Fighter (JSF) as soon as possible, with the goal of initial Navy production in fiscal year 2008; and retain the option to procure additional F/A-18 E/F up to a maximum of 785 if Joint Strike Fighter development requires more time. These fleet reductions, combined with streamlining of overseas infrastructure and the transfer of some combat logistics ships and functions to the Military Sealift Command, will allow the Navy to reduce active and Reserve end strength by 18,000 and 4,100 personnel respectively.
- The Air Force will consolidate fighter and bomber units to streamline its command structure and shift one active component fighter wing to the Reserve component. It will pursue an aggressive outsourcing plan that accelerates competition of support functions. The Air Force will reduce its force structure for continental air defense and handle the U.S. air sovereignty missions with other forces. The fighter forces available for deployment to support the strategy will be 12 active and eight Reserve fighter wing equivalents. These initiatives will allow the Air Force to realize a reduction of approximately 27,000 active duty personnel. The Air Force will proceed with the F-22 aircraft program to replace the F-15 C/D air superiority capability and perform air-to-ground missions. Consistent with its greater capability, the total number to be procured will be reduced from 438 to 339.
- The Marine Corps will take modest reductions in end strength through a restructuring of support responsibilities. The Corps will maintain a three Marine Expeditionary Force capability to support the strategy. MV-22 tiltrotor aircraft procurement will be accelerated to meet the urgent need to replace aging medium-lift capability, while the total number procured will be reduced to 360, consistent with the system's superior capability.
- The total active duty end strength will be reduced to 1,360,000 (down 36 percent from 1989), with 835,000 in the Reserve forces (down 29 percent from 1989).

Civilian personnel will decline to 640,000 (down 42 percent from 1989).

- We have decided to slow the Army's Theater High Altitude Area Defense System because of serious technical problems. Shifting the deployment date from 2004 to 2006 improves the stability of the program, lowers risk, and allows us to explore using common components with the Navy Theater-Wide missile defense program. Other theater missile defense programs remain on track.
- National Missile Defense (NMD) remains a high priority. The Administration and Congress have agreed to keep this program on an accelerated research and development path aimed at creating the option to make a decision on deployment possible as early as fiscal year 2000, if the threat warrants. The goal of the program is to be able to deploy an initial capability within three years after the decision on deployment is made. The QDR analysis concluded that the fiscal year 2000 target could not be met within the current program budget. We are directing additional funds to NMD, but even with additional funds, NMD will remain a program of high schedule and technical risk.
- The QDR highlighted the danger to our nation and forces of "asymmetric threats," ranging from nuclear, biological, and chemical weapons to attacks via information warfare and terrorism. We will give increased focus and funding to countering such threats.
- The QDR studied a number of options regarding strategic nuclear forces. The Review concluded that the policy and strategy to maintain our nuclear forces are still correct and needed. In line with congressional instructions, we will maintain the START I force posture in the current budget while the Russian Duma considers ratification of START II. To continue this in fiscal year 1999 would require an additional \$64 million. We remain committed to START II and to negotiating further reductions in a START III agreement after START II is ratified. Savings from deeper strategic nuclear force reductions could free resources for our National Missile Defense program.
- Based on QDR analysis of our future needs versus our remaining infrastructure, the Department will request authority for two additional rounds of Base Realignment and Closure (BRAC) and for the restructuring of laboratories, research, development, and test facilities. We will look for additional opportunities to outsource many functions and work with Congress to radically reengineer and deregulate the Department's business practices.
- Finally, a series of Defense-wide program adjustments will free up funds for increased investment in key programs.

Modernization of our forces depends upon a strong backbone of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. The important and central role of these systems, and the large resources that must be devoted to them, inspired a hard and sweeping look at our entire effort devoted to C4ISR. The general focus and amount of resources devoted to this effort were

determined to be appropriate. We made a similar study of our munitions programs and found that there is a high payoff for the large investment we are making in precision weapons and that the focus of the programs and the scale of effort are appropriate.

The transformation of our forces is an ongoing process. *Joint Vision 2010* provides a conceptual umbrella for the other long-range visions and plans developed by the Services and other DoD components, which are outlined in the QDR report. The U.S. military is committed to realizing these joint and service visions of modern warfare and is already taking a number of steps to do so. It is a Total Force effort, involving both active and Reserve component forces. By undertaking efforts ranging from studies and war games to advanced concept technology demonstrations and battlefield experiments, the armed forces are developing and testing concepts and capabilities that will ensure their ability to transform for the future. Brief summaries of these efforts are included in the report.

The final steps in preparing for the future, and ones that are essential to putting our program on a fiscally sound basis, are to shed excess infrastructure and to fundamentally reengineer our business processes.

The downsizing of our infrastructure has fallen behind the downsizing of our force structure, in spite of four BRAC rounds. Since the first base closure round, force structure has come down by 33 percent and will have declined by a total of 36 percent when we finish the reductions under the QDR. During the same period, we will have reduced domestic infrastructure by 21 percent as measured by the replacement value of physical facilities. In essence, our combat forces are headed towards the 21st century, but our infrastructure is stuck in the past. We cannot afford this waste of resources in an environment of tough choices and fiscal constraint. We must shed more weight.

Although the savings from BRAC come slowly and require up-front costs, the savings to be achieved are significant. Last year, we began to receive annual savings beyond the annual costs for the first four BRAC rounds and by 2001, recurring savings will exceed \$5 billion every year. The Review found that we have enough excess infrastructure to require the two additional rounds of BRAC for which we will seek authority. Included in the reduction of infrastructure must also be our research and development and test facilities, laboratories, and ranges.

We also need to take advantage of business process improvements being pioneered in the private sector. Over the past decade, the American commercial sector has reorganized, restructured, and adopted revolutionary new business and management practices in order to ensure its competitive edge in the rapidly changing global marketplace. It has worked. Now the Department must adopt and adapt the lessons of the private sector if our armed forces are to maintain their competitive edge in the rapidly changing global security arena.

The Department has made much progress already in overhauling the defense acquisition system - with full support from Congress. Those efforts are paying significant dividends, permitting us to get far more for each dollar we spend than previously. We have also achieved savings through streamlining our organizations and business practices -

replacing cumbersome and expensive systems for minor purchases, for example, with simple credit card operations. However, we need to go much further and deeper, and we need congressional support.

We are examining the best opportunities to outsource and privatize non-core activities, but many of those opportunities are restrained by regulations and practices built up during the Cold War. We need to deregulate defense just as we have deregulated many other American industries so we can reap the cost and creativity benefits of wide-open private competition. A guiding principle of the American government is that the government should not perform private sector-type functions, and this should also be true of the defense sector unless a compelling military need is demonstrated.

I have established a Defense Reform Task Force to review the Office of the Secretary of Defense, Defense agencies, DoD field activities, and the military departments and to look for ways we can consolidate functions, eliminate duplication of effort, and improve efficiency. The Task Force will consult with Congress and with business executives who have successfully streamlined their corporations in recent years. It will also work closely with the National Defense Panel, the independent, congressionally mandated board that is reviewing the QDR, and with the Vice President's National Performance Review. I have directed the Task Force to submit its report and findings to me by November 30, and I will act on its interim findings as appropriate.

Many of the Department's current institutions and infrastructures enjoy significant political support for their local economic contributions. However, the primary test must be their contribution to overall military effectiveness. We must act now if we are to have the resources to invest in modernization in the midterm and if our support capabilities are to keep pace with our military capabilities in the long term.

This approach reflects both the spirit of the Administration's efforts to reinvent government and the commitment of Congress to focus government on core functions. As a former elected official who has witnessed the difficult transformation in communities affected by base closure, I fully appreciate the anxiety and, indeed, trauma that often is involved. But ultimately, we need to decide what is more important:

- keeping a maintenance depot in government hands, or putting advanced technology in soldiers' hands;
- protecting a facility, or protecting our forces;
- preserving local defense contracts, or promoting solid enlistment contracts.

These are stark choices - and while we must make changes wisely and with compassion for the civilians who have given years of faithful service, we must also keep faith with the men and women of the military services. Over half of them have known only an armed force steadily shrinking in size. There is great uncertainty about the future. Yet, they perform magnificently as they serve our country abroad and at home. We must take care of them and their families and ensure that we have given them the best tools to do the jobs we ask. If we take care of them, they will take care of us.

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The report describes in detail the process we followed, choices we made, our reasons for making them, and the benefits and risks inherent in each. The report is laid out exactly as the Review progressed, beginning with a description of the global environment in which America operates. It reaches conclusions on the best strategy for achieving our national goals, and it describes a series of integrated options by which that strategy could be executed. It also analyzes the fiscal environment in which those options had to be considered. From our choice among those options flowed a series of structural and programmatic decisions required to implement the strategy.

The strategy and the plan presented in this report will give us the military capability and forces we need throughout the 1997-2015 time frame and beyond. The plan balances the needs of the present with the challenges of the future. Our program provides for the forces to deal with present threats, while also making available the resources to transform that force to one capable of seizing the opportunities and dealing with the threats of 2015. That transformation already has begun as outlined in the Joint Staff and Service vision plans and is being tested in ongoing warfighting experiments.

The plan we have outlined is an integrated whole. It is based on our strategy, but we cannot carry out that strategy without sufficient resources. Those resources exist within the Department's budget, if we wisely utilize them. Doing so requires tough choices and changing the way we do business. It will require legislation in some areas and congressional support. Most of all, it requires joint effort, focused on the goal of protecting our nation as a whole and not the interests of any region, industry, or special interest. If we are not willing to do business in new ways, we need to face up to that fact and be prepared to pay more for less impact. Or, we can decide to do less and be less as a nation.

The Greek rhetorician Gorgias spoke of the great challenge of choosing when the choosing is most difficult, "to speak or not to speak, to do or leave undone," and to do so with "the indispensable virtues - prudence and firmness - one for choosing a course, the other for pursuing it."

America begins the new millennium as the sole superpower, the indispensable nation. The responsibilities are heavy and the choices difficult. But with those responsibilities and choices come enormous benefits and opportunities. This report sets forth the Department of Defense's vision of what lies ahead as our nation embarks upon a new American Century - both the dangers and the possibilities - as endorsed by the President as Commander in Chief. It is not enough for us to speak; it is time to decide. The next generation will judge us for our actions, not our words. Working with Congress and, by extension, the American people, we have chosen this course with prudence. We must now pursue it with firmness.

/signed/

William S. Cohen
Secretary of Defense

[Go to Section 1](#)

[Back to Table of Contents](#)

Section I

DESIGN, APPROACH, AND IMPLEMENTATION OF THE QUADRENNIAL DEFENSE REVIEW

As the fourth comprehensive review of our military since the end of the Cold War, the Quadrennial Defense Review (QDR) builds on our experience with the policy and forces of the 1991 Base Force Review, the 1993 Bottom-Up Review (BUR), and the 1995 Commission on Roles and Missions of the Armed Forces (CORM). As a result of those reviews, we made significant adjustments in our forces, procedures, and organizations. We have also accumulated a wealth of experience in a new and constantly changing security environment. That experience tells us that we have the finest military force in our nation's history, with unsurpassed professionalism and capability. Nevertheless, this is a propitious time to reexamine our assumptions, programs, and operations. Indeed, the rapid rate of change in the world since the end of the Cold War underscores the importance of undertaking such a reexamination on a regular basis.

The QDR is required by the Military Force Structure Review Act, which was included as part of the National Defense Authorization Act for Fiscal Year 1997. The Department of Defense designed the QDR to be a fundamental and comprehensive examination of America's defense needs from 1997 to 2015: potential threats, strategy, force structure, readiness posture, military modernization programs, defense infrastructure, and other elements of the defense program. The QDR is intended to provide a blueprint for a strategy-based, balanced, and affordable defense program.

ORGANIZATION AND APPROACH

The QDR was a collaborative effort between the Office of the Secretary of Defense (OSD) and the Joint Staff, with extensive participation from the Military Services and the Commanders in Chief of the Combatant Commands. The Review was designed to be both bottom-up and top-down. It was bottom-up in the sense that the QDR tapped expertise and ideas from throughout the Department and solicited additional ideas and support from beyond DoD. The effort was top-down in the sense that the Secretary of Defense and Chairman of the Joint Chiefs of Staff guided the process to ensure that all choices and alternatives provided the capabilities necessary to execute the strategy.

The QDR was structured into three organizational tiers or levels. At the first level, seven panels conducted reviews of strategy, force structure, readiness, modernization, infrastructure, human resources, and information operations and intelligence. At the second level, an Integration Group organized the panel results into a coherent set of "integrated options" designed to be consistent with the defense strategy. At the third level, a Senior Steering Group, co-chaired by the Deputy Secretary of Defense and the Vice Chairman of the Joint Chiefs of Staff, oversaw the entire process and made recommendations to the Secretary of Defense, who, in turn, reviewed the recommendations in consultation with the Chairman and other members of the Joint Chiefs of Staff.

From the beginning of the QDR, the Senior Steering Group established a road map for

the effort that required close adherence to the following milestones:

- *Start-up and guidance phase* (December 1996): Identify issues, provide guidance and direction to panels, and begin evaluation of the threat assessment.
- *Strategy and fiscal context phase* (January 1997): Present defense strategy and projection of fiscal environment and program risks.
- *Analysis phase* (February 1997): Report initial results of panel reviews.
- *Integration phase* (March 1997): Evaluate and refine integrated options within the defense strategy framework.
- *Decision phase* (April 1997): Present refined alternatives to Secretary of Defense for decision and identify issues for further evaluation.

Drawing on the basic principles of the Review, work in each phase built directly upon the work of the preceding phase, leading ultimately to the decisions that are contained in this report. Work in the second and third phases began simultaneously and was initially conducted largely in parallel because of the enormity of the task and the tight schedule. The second and third phases were then reconciled in the last two phases in order to produce an integrated result.

The National Defense Panel received regular briefings on the work of the panels as well as on the integration options and decisions. The National Security Council staff and other Administration agencies also participated at various points in the Review. As the decision options began to take shape, the Department began consultation with Congress. The President reviewed and then approved the defense strategy and the final decisions regarding program directions.

IMPLEMENTATION

The Department will continue to consult with Congress on the QDR and implement the results through the submission of any needed changes in the Fiscal Year (FY) 1998 budget and the development of a detailed budget for FY 1999 and revised program plans through FY 2003. During that process, the Department will also work closely with the National Defense Panel and study any additional options the Panel identifies. In addition, the Department will conduct a series of follow-up studies in the months to come, many of which are identified in this report.

THE GOVERNMENT PERFORMANCE AND RESULTS ACT

The QDR will serve as the overall strategic planning document of the Department. The QDR is also intended to fulfill the strategic planning requirements of the Government Performance and Results Act (GPRA) (P.L. 103-62). The Department's plan for GPRA implementation includes extracting key corporate goals from the QDR and integrating GPRA into the Planning, Programming, and Budgeting System (PPBS). DoD organizations at all levels will review their strategic plans and mission objectives to ensure that they link to the goals and objectives of the QDR. Future GPRA performance

reports will indicate progress made towards meeting the key QDR corporate level goals.

[Go to Section 2](#)

[Back to Table of Contents](#)

Section II

THE GLOBAL SECURITY ENVIRONMENT

As the 21st century approaches, the United States faces a dynamic and uncertain security environment replete with both opportunities and challenges. On the positive side of the ledger, we are in a period of strategic opportunity. The threat of global war has receded and our core values of representative democracy and market economics are embraced in many parts of the world, creating new opportunities to promote peace, prosperity, and enhanced cooperation among nations. The sustained dynamism of the global economy is transforming commerce, culture, and global interactions. Our alliances, such as NATO, the U.S.-Japan alliance, and the U.S.-Republic of Korea alliance, which have been so critical to U.S. security, are adapting successfully to meet today's challenges and provide the foundation for a remarkably stable and prosperous world. Former adversaries, like Russia and other former members of the Warsaw Pact, now cooperate with us across a range of security issues. In fact, many in the world see the United States as the security partner of choice.

Nevertheless, the world remains a dangerous and highly uncertain place, and the United States likely will face a number of significant challenges to its security between now and 2015.

First, we will continue to confront a variety of regional dangers.

Foremost among these is the threat of coercion and large-scale, cross-border aggression against U.S. allies and friends in key regions by hostile states with significant military power. In Southwest Asia, both Iraq and Iran continue to pose threats to their neighbors and to the free flow of oil from the region. Access to oil will remain a U.S. national requirement for the foreseeable future. In the Middle East, the potential for conflict will remain until there is a just and lasting peace in the region and security for Israel.

In East Asia, the Korean peninsula remains divided. North Korea continues to pose a highly unpredictable threat due to the continued forward positioning of its offensive military capabilities on South Korea's border and the enormous pressures imposed by increasingly dire economic conditions. Elsewhere in the region, sovereignty issues and several territorial disputes remain potential sources of conflict.

Between now and 2015, it is reasonable to assume that more than one aspiring regional power will have both the desire and the means to challenge U.S. interests militarily.

In addition, failed or failing states may create instability, internal conflict, and humanitarian crises, in some cases within regions where the United States has vital or important interests. As we saw in Somalia and the former Yugoslavia, and as we see today in countries ranging from Albania to Zaire, some governments will lose their ability to maintain public order and provide for the needs of their people, creating the conditions for civil unrest, famine, massive flows of migrants across international borders, and aggressive actions by neighboring states or even mass killings.

Second, despite the best efforts of the international community, states find it increasingly

difficult to control the flow of sensitive information and regulate the spread of advanced technologies that can have military or terrorist uses. The proliferation of advanced weapons and technologies will continue. This could destabilize some regions and increase the number of potential adversaries with significant military capabilities, including smaller states and parties hostile to the United States, and change the character of the military challenges that threaten our national security.

Of particular concern is the spread of nuclear, biological, and chemical (NBC) weapons and their means of delivery; information warfare capabilities; advanced conventional weapons; stealth capabilities; unmanned aerial vehicles; and capabilities to access, or deny access to, space. The NBC proliferation trend is especially worrisome in the Former Soviet Union, where the ability of some states to exert effective control over significant, inherited stockpiles of NBC weapons, materials, and technologies is in doubt. It is also a concern in the Middle East, where the proliferation of advanced technologies provides rogue states such as Iran with increasingly sophisticated means to threaten regional security, and in East Asia, where such proliferation threatens to upset delicate military balances in a region rife with long-festering territorial disputes. The civilian marketplace is developing technology that has dual civilian and military applications, and this makes it difficult to slow the diffusion of technology to potentially hostile state and non-state actors. Nations such as the United States that embed such technology in their military forces could be particularly vulnerable to countermeasures if this challenge is not fully considered in system designs.

Third, as the early years of the post-Cold War period portended, U.S. interests will continue to be challenged by a variety of transnational dangers, and the lives of U.S. citizens will often be placed at risk, directly and indirectly. Increasingly capable and violent terrorists will continue to directly threaten the lives of American citizens and try to undermine U.S. policies and alliances. The illegal drug trade and international organized crime will continue to ignore our borders, attack our society, and threaten our personal liberty and well-being. Uncontrolled flows of migrants will sporadically destabilize regions of the world and threaten American interests and citizens.

Fourth, while we are dramatically safer than during the Cold War, the U.S. homeland is not free from external threats. In addition to the threat inherent in the strategic nuclear arsenals of other countries, there is the potential for further spread of intercontinental ballistic missiles and weapons of mass destruction. In addition, other unconventional means of attack, such as terrorism, are no longer just threats to our diplomats, military forces, and private Americans overseas, but will threaten Americans at home in the years to come. Information warfare (attacks on our infrastructure through computer-based information networks) is a growing threat.

Indeed, U.S. dominance in the conventional military arena may encourage adversaries to use such asymmetric means to attack our forces and interests overseas and Americans at home. That is, they are likely to seek advantage over the United States by using unconventional approaches to *circumvent* or *undermine* our strengths while *exploiting* our vulnerabilities. Strategically, an aggressor may seek to avoid direct military confrontation with the United States, using instead means such as terrorism, NBC threats, information warfare, or environmental sabotage to achieve its goals. If, however, an adversary ultimately faces a conventional war with the United States, it could also

employ asymmetric means to delay or deny U.S. access to critical facilities; disrupt our command, control, communications, and intelligence networks; deter allies and potential coalition partners from supporting U.S. intervention; or inflict higher than expected U.S. casualties in an attempt to weaken our national resolve.

Areas in which the United States has a significant advantage over potential opponents and increasing capabilities (e.g., space-based assets; command, control, communications, and computers; and intelligence, surveillance, and reconnaissance) could also involve inherent vulnerabilities that could be exploited by potential opponents (e.g., attacking our reliance on commercial communications) should we fail to account for such challenges. Dealing with such asymmetric challenges must be an important element of U.S. defense strategy, from fielding new capabilities to adapting how U.S. forces will operate in future contingencies.

Along with these projected trends (continued regional dangers, the proliferation of advanced weapons and technologies, transnational dangers, and the increased danger of asymmetric attacks), there are a number of "wild card" scenarios that could seriously challenge U.S. interests both at home and abroad. Such scenarios range from the unanticipated emergence of new technological threats, to the loss of U.S. access to critical facilities and lines of communication in key regions, to the takeover of friendly regimes by hostile parties. Taken individually, these scenarios are unlikely. But taken together, it is more likely that one or more wild cards *will* occur than it is that *none* will occur. In addition, while the probability of individual wild cards may be low, their consequences may be disproportionately high. Therefore, the United States must maintain military capabilities sufficient to deal with such events.

The security environment between now and 2015 will also likely be marked by the absence of a "global peer competitor" able to challenge the United States militarily around the world as the Soviet Union did during the Cold War. Furthermore, it is likely that no regional power or coalition will amass sufficient conventional military strength in the next 10 to 15 years to defeat our armed forces, once the full military potential of the United States is mobilized and deployed to the region of conflict. The United States is the world's only superpower today, and it is expected to remain so throughout the 1997-2015 period.

In the period beyond 2015, there is the possibility that a regional great power or global peer competitor may emerge. Russia and China are seen by some as having the potential to be such competitors, though their respective futures are quite uncertain.

Russia's future will depend in large measure on its ability to develop its economy, which in turn is dependent upon a stable political environment. Russia has made progress in building new democratic institutions, and the United States has made extensive efforts, successful in many cases, to build a partnership with Russia across the political, economic, and security fields. Russia's agreements with NATO will assist in integrating it into a larger European security architecture. Those agreements may dramatically alter Russian attitudes and shape a different security picture. Russia's military forces will either undergo substantial change, including additional downsizing and reorganizing, or face a continued process of progressive deterioration. Russia is also expected to continue to emphasize its research and development program, with modernization of its strategic

nuclear capabilities and their continuous operational effectiveness a top priority. However, bringing a significant number of conventional weapons systems into production will depend on the success of its economic recovery.

China has the potential to become a major military power in Asia. The United States will continue to engage China, seeking to foster cooperation in areas where our interests overlap and influence it to make a positive contribution to regional stability and act as a responsible member of the international community. China is likely to continue to face a number of internal challenges, including the further development of its economic infrastructure and the tension between a modern market economy and authoritarian political system, that may slow the pace of its military modernization. Moreover, China's efforts to modernize its forces and improve its power-projection capabilities will not go unnoticed, likely spurring concerns from others in the region.

Finally, it is important to note that this projection of the security environment rests on two fundamental assumptions: that the United States will remain politically and militarily engaged in the world over the next 15 to 20 years, and that it will maintain military superiority over current and potential rivals. If the United States were to withdraw from its international commitments, relinquish its diplomatic leadership, or relinquish its military superiority, the world would become an even more dangerous place, and the threats to the United States, our allies, friends, and interests would be even more severe.

[Go to Section 3](#)

[Back to Table of Contents](#)

Section III

DEFENSE STRATEGY

Since the founding of the Republic, the United States has embraced several fundamental and enduring goals as a nation: to maintain the sovereignty, political freedom, and independence of the United States, with its values, institutions, and territory intact; to protect the lives and personal safety of Americans, both at home and abroad; and to provide for the well-being and prosperity of the nation and its people.

Achieving these basic goals in an increasingly interdependent world requires fostering an international environment in which critical regions are stable, at peace, and free from domination by hostile powers; the global economy and free trade are growing; democratic norms and respect for human rights are widely accepted; the spread of nuclear, biological, and chemical (NBC) and other potentially destabilizing technologies is minimized; and the international community is willing and able to prevent and, if necessary, respond to calamitous events. The United States seeks to play a leadership role in the international community, working closely and cooperatively with nations that share our values and goals, and influencing those that can affect U.S. national well-being.

KEY TENETS OF U.S. NATIONAL SECURITY STRATEGY

How can we best achieve these national security goals and preferred international conditions in today's changing, uncertain, and still dangerous world?

In recent years people have expressed views on this question spanning the political and ideological spectrum. At one end of the spectrum, it can be argued that because we no longer face the challenge of a global peer competitor like the Soviet Union, we would be best served as a nation by focusing our energies at home and only committing military forces when our nation's survival is at stake. This point of view argues that our obligations beyond protecting our own survival and that of key allies are few. This is, in essence, a 19th century view of the world, which ignores the impact of global events on our nation, the growing interdependence of the world economy, and the acceleration of the information technology revolution.

At the other end of the spectrum is the argument that as the world's only remaining superpower, the United States has significant obligations that go well beyond any traditional view of national interest, such as generally protecting peace and stability around the globe, relieving human suffering wherever it exists, and promoting a better way of life, not only for our own citizens but for others as well.

In between these competing visions of isolationism and world policeman lies a security strategy that is consistent with our global interests - a national security strategy of engagement. A strategy of engagement presumes the United States will continue to exercise strong leadership in the international community, using all dimensions of its influence to shape the international security environment. This is particularly important to ensuring peace and stability in regions where the United States has vital or important interests and to broadening the community of free-market democracies. Strengthening

and adapting alliances and coalitions that serve to protect shared interests and values are the most effective ways to accomplish these ends.

While the United States will retain the capability to act unilaterally, a strategy that emphasizes coalition operations is essential to protecting and promoting our national interests in a world in which we as a nation must often act in concert with others to create our preferred international conditions and secure our basic national goals. Indeed, the nature of the challenges we face demands cooperative, multinational approaches that distribute the burden of responsibility among like-minded states. For example, to effectively curb the proliferation of NBC weapons, the United States must garner the cooperation of other nations that have access to NBC technology and materials. Therefore, it is imperative that the United States strives to build close, cooperative relations with the world's most influential countries.

Maintaining a strong military and the willingness to use it in defense of national and common interests remain essential to a strategy of engagement as we approach the 21st century. Today, the United States has unparalleled military capabilities. We are the only nation in the world able to conduct large-scale, effective joint military operations far beyond its borders. This places us in a unique position. We are the only power in the world that can organize effective military responses to large-scale regional threats, the cornerstone of many mutually beneficial alliances and security partnerships, and the foundation of stability in key regions of the world. To sustain this position of leadership, the United States must maintain ready and versatile forces capable of conducting a wide range of military activities and operations - from deterring and defeating large-scale aggression, to participating in smaller-scale contingencies, to dealing with asymmetric threats like terrorism.

Nevertheless, both U.S. national interests and limited resources argue for the *selective* use of U.S. forces. The primary purpose of U.S. forces is to deter and defeat the threat of organized violence against the United States and its interests. Decisions about whether and when to use military forces should be guided, first and foremost, by the U.S. national interests at stake - be they vital, important, or humanitarian in nature - and by whether the costs and risks of a particular military involvement are commensurate with those interests. When the interests at stake are vital - that is, they are of broad, overriding importance to the survival, security, and vitality of the United States - we should do whatever it takes to defend them, including, when necessary, the unilateral use of military power. U.S. vital national interests include, but are not limited to:

- protecting the sovereignty, territory, and population of the United States, and preventing and deterring threats to our homeland, including NBC attacks and terrorism;
- preventing the emergence of a hostile regional coalition or hegemon;
- ensuring freedom of the seas and security of international sea lines of communication, airways, and space;
- ensuring uninhibited access to key markets, energy supplies, and strategic resources;

- deterring and, if necessary, defeating aggression against U.S. allies and friends.

In other cases, the interests at stake may be important but not vital - that is, they do not affect our national survival but do significantly affect our national well-being and the character of the world in which we live. In these cases, military forces should be used only if they advance U.S. interests, are likely to accomplish their objectives, and other means are inadequate to accomplish our goals. Such uses of force should be both selective and limited, reflecting the relative saliency of the U.S. interests involved.

When the interests at stake are primarily humanitarian in nature, the U.S. military is generally not the best means of addressing a crisis. In some situations, however, use of our military's unique capabilities may be both necessary and appropriate: when a humanitarian catastrophe dwarfs the ability of civilian relief agencies to respond; or when the need for immediate relief is urgent and only the U.S. military has the ability to jump-start the longer-term response to the disaster. In such cases, if the United States decides to commit military forces to assist in the situation, the military mission should be clearly defined, the risk to American troops should be minimal, and substantial U.S. military involvement should be confined to the initial period of providing relief until broader international assistance efforts get underway.

In all cases where the commitment of U.S. forces is considered, determining whether the associated costs and risks are commensurate with the U.S. interests at stake should be the central calculus of U.S. decisions. Such decisions should also depend on our ability to identify a clear mission, the desired end state of the situation, and the exit strategy for forces committed.

THE DEFENSE STRATEGY

In order to support this national security strategy, the U.S. military and the Department of Defense must be able to help shape the international security environment in ways favorable to U.S. interests, respond to the full spectrum of crises when directed, and prepare now to meet the challenges of an uncertain future. These three elements - shaping, responding, and preparing - define the essence of U.S. defense strategy between now and 2015.

SHAPING THE INTERNATIONAL ENVIRONMENT

In addition to other instruments of national power, such as diplomacy and economic trade and investment, the Department of Defense has an essential role to play in shaping the international security environment in ways that promote and protect U.S. national interests. Our defense efforts help to promote regional stability, prevent or reduce conflicts and threats, and deter aggression and coercion on a day-to-day basis in many key regions of the world. To do so, the Department employs a wide variety of means including: forces permanently stationed abroad; forces rotationally deployed overseas; forces deployed temporarily for exercises, combined training, or military-to-military interactions; and programs such as defense cooperation, security assistance, International Military Education and Training (IMET) programs, and international arms cooperation.

DoD's role in shaping the international environment is closely integrated with our

diplomatic efforts. On a daily basis, our diplomatic and military representatives work together towards U.S. objectives in all regions of the world. In times of crisis, diplomacy is a critical force multiplier when the United States seeks and works with coalition partners and requires access to foreign bases and facilities. Conversely, diplomacy is frequently enhanced when it is supported by the potential for a military response.

Promoting Regional Stability

Our armed forces, operating in conjunction with other U.S. agencies, promote regional stability in numerous ways that support our national security strategy. In regions where the United States has vital and important interests, the U.S. military helps bolster the security of key allies and friends and works to adapt and strengthen core alliances and coalitions to meet the challenges of an evolving security environment. This engagement forms bilateral and multilateral relationships that increase military transparency and confidence. In addition, the U.S. military often serves as a preferred means of engagement with countries that are neither staunch friends nor confirmed foes. These contacts build constructive security relationships and help to promote the development of democratic institutions today, in an effort to keep these countries from becoming adversaries tomorrow. Through both example and enforcement, U.S. forces encourage adherence to the international norms and regimes that help provide the foundation for peace and stability around the globe, such as nonproliferation, freedom of navigation, and respect for human rights and the rule of law. Promoting regional stability places a premium on building close working relationships with other U.S. government agencies, coalition partners, and nongovernmental organizations.

Preventing or Reducing Conflicts and Threats

Another essential element of our strategy is using U.S. military forces and other DoD resources to prevent or reduce threats and conflicts. This is a critical reason why we maintain forces overseas, conduct peacetime engagement activities, and fund various policy initiatives. Such preventive measures include focused efforts to:

- Actually reduce or eliminate NBC capabilities, as has been done with the U.S.-North Korean Agreed Framework and the Cooperative Threat Reduction program with Russia, Ukraine, Belarus, and Kazakhstan;
- Discourage arms races and the proliferation of NBC weapons, as is being done by DoD efforts to monitor and enforce arms control agreements such as the Nuclear Non-Proliferation Treaty and the Missile Technology Control Regime;
- Prevent and deter future terrorism and reduce U.S. vulnerability to terrorist acts through DoD efforts to enhance intelligence collection capabilities and protect critical infrastructure;
- Reduce the production and flow to the United States of illegal drugs by means of DoD support to the joint interagency task forces operating along our coasts and southern border;
- Lessen the conditions for conflict, as we have through the deployment of U.S. forces

in Macedonia.

Relatively small and timely investments in such targeted prevention measures can yield disproportionate benefits, often mitigating the need for a more substantial and costly U.S. response later.

Deterring Aggression and Coercion

The third aspect of the military's key role in shaping the international security environment is deterring aggression and coercion in key regions of the world on a day-to-day basis through the peacetime deployment of U.S. military forces abroad. Our ability to deter potential adversaries in peacetime rests on several factors:

- Our demonstrated will and ability to uphold our security commitments when and where they are challenged;
- A declaratory policy that effectively communicates U.S. commitments and the costs to potential adversaries that might challenge these commitments;
- Conventional warfighting capabilities that are credible across the full spectrum of military operations. This credibility is evidenced by U.S. forces and equipment strategically stationed or deployed forward, our rapidly deployable power-projection forces, our ability to gain timely access to critical infrastructure overseas, and our demonstrated ability to form and lead effective military coalitions.

Our nuclear posture also contributes substantially to our ability to deter aggression in peacetime. The primary role of U.S. nuclear forces in the current and projected security environment is to deter aggression against the United States, its forces abroad, and its allies and friends. Although the prominence of nuclear weapons in our defense posture has diminished since the end of the Cold War, nuclear weapons remain important as a hedge against NBC proliferation and the uncertain futures of existing nuclear powers, and as a means of upholding our security commitments to allies.

In this context, the United States must retain strategic nuclear forces sufficient to deter any hostile foreign leadership with access to nuclear weapons from acting against our vital interests and to convince such a leadership that seeking a nuclear advantage would be futile. Thus, for the foreseeable future, the United States will continue to need a reliable and flexible nuclear deterrent - survivable against the most aggressive attack, under highly confident, constitutional command and control, and safeguarded against both accidental and unauthorized use. We believe these goals can be achieved at lower force levels. Consistent with this, the United States remains committed to negotiating further reductions in U.S. and Russian strategic nuclear arsenals consistent with the agreed START III framework once Moscow ratifies the START II treaty.

RESPONDING TO THE FULL SPECTRUM OF CRISES

Despite our best efforts to shape the international security environment, the U.S. military will, at times, be called upon to respond to crises in order to protect our interests, demonstrate our resolve, and reaffirm our role as global leader. Therefore, U.S. forces

must also be able to execute the full spectrum of military operations, from deterring an adversary's aggression or coercion in crisis and conducting concurrent smaller-scale contingency operations, to fighting and winning major theater wars.

Although the United States will retain the capabilities to protect its interests unilaterally, we often find advantages to acting in concert with like-minded nations when responding to crises. Acting in coalition or alliance with other nations, rather than alone, generally strengthens the political legitimacy of a course of action and brings additional resources to bear, ensuring that the United States need not shoulder the political, military, and financial burdens alone. But building and maintaining effective coalitions also present significant challenges, from policy coordination at the strategic level to interoperability among diverse military forces at the tactical level. As the U.S. military incorporates new technologies and operational concepts at a pace faster than that of any other military, careful design and collaboration will be needed to ensure we meet new interoperability challenges. Because coalitions will continue to present both important political benefits and not insignificant military challenges, U.S. forces must plan, train, and prepare to respond to the full spectrum of crises in coalition with the forces of other nations.

Deterring Aggression and Coercion in Crisis

In many cases, the first stage of responding to a crisis is trying to deter an adversary so that the situation does not require a greater response. Deterrence in a crisis generally involves signaling the United States' commitment to a particular country or expressing our national interest by enhancing our warfighting capability in the theater. Our ability to respond rapidly and substantially as a crisis develops can have a significant deterrent effect. The readiness levels of deployable forces may be increased, forces deployed in the area may be moved closer to the crisis, and forces from the United States may be rapidly deployed to the area. The United States may also choose to make additional declaratory statements to communicate its intentions and the costs of aggression or coercion to an adversary. In some cases, we may choose to employ U.S. forces in a limited manner (e.g., to enforce sanctions or conduct limited strikes) to underline this message and deter further adventurism.

Conducting Smaller-Scale Contingency (SSC) Operations

In general, the United States, along with others in the international community, will seek to prevent and contain localized conflicts and crises before they require a military response. If, however, such efforts do not succeed, swift intervention by military forces may be the best way to contain, resolve, or mitigate the consequences of a conflict that could otherwise become far more costly and deadly. These operations encompass the full range of joint military operations beyond peacetime engagement activities but short of major theater warfare and include: show-of-force operations, interventions, limited strikes, noncombatant evacuation operations, no-fly zone enforcement, peace enforcement, maritime sanctions enforcement, counterterrorism operations, peacekeeping, humanitarian assistance, and disaster relief.

Based on recent experience and intelligence projections, the demand for smaller-scale contingency operations is expected to remain high over the next 15 to 20 years. U.S. participation in smaller-scale contingency operations must be selective, depending

largely on the interests at stake and the risk of major aggression elsewhere. However, these operations will still likely pose the most frequent challenge for U.S. forces through 2015 and may require significant commitments of forces, both active and Reserve. Over time, substantial commitments to multiple concurrent smaller-scale contingency operations will certainly stress U.S. forces in ways that must be carefully managed. Smaller-scale contingency operations will also put a premium on the ability of the U.S. military to work effectively with other U.S. government agencies, nongovernmental organizations, private voluntary organizations, and a variety of coalition partners. They also require that the U.S. government, including both the military and other agencies, continuously and deliberately reassess both the challenges we encounter in such operations and the capabilities required to meet these challenges.

Therefore, the U.S. military must be prepared to conduct successfully multiple concurrent smaller-scale contingency operations worldwide, and it must be able to do so in any environment, including one in which an adversary uses asymmetric means, such as NBC weapons. Importantly, U.S. forces must also be able to withdraw from smaller-scale contingency operations, reconstitute, and then deploy to a major theater war in accordance with required timelines. Although in some cases this may pose significant operational, diplomatic, and political challenges, the ability to transition between peacetime operations and warfighting remains a fundamental requirement for virtually every unit in the U.S. military. U.S. forces must be multi-mission capable and they must be organized, trained, equipped, and managed with multiple missions in mind.

Fighting and Winning Major Theater Wars (MTW)

At the high end of the crisis continuum is fighting and winning major theater wars. This mission is the most stressing requirement for the U.S. military. In order to protect American interests around the globe, U.S. forces must continue to be able to overmatch the military power of regional states with interests hostile to our own. Such states are often capable of fielding sizable military forces that can cause serious imbalances in military power within regions important to the United States. Allies and friendly states often find it difficult to match the power of a potentially aggressive neighbor. To deter aggression, prevent coercion of allied or friendly governments, and defeat aggression should it occur, we must prepare U.S. forces to confront this scale of threat far from home, in concert with our allies and friends, but unilaterally if necessary. Toward this end, we must have jointly trained and interoperable forces that can deploy quickly across great distances to supplement forward stationed and deployed U.S. forces, to assist a threatened nation, rapidly stop an enemy invasion, and defeat an aggressor.

As a global power with worldwide interests, it is imperative that the United States now and for the foreseeable future be able to deter and defeat large-scale, cross-border aggression in two distant theaters in overlapping time frames, preferably in concert with regional allies. Maintaining this core capability is central to credibly deterring opportunism - that is, to avoiding a situation in which an aggressor in one region might be tempted to take advantage when U.S. forces are heavily committed elsewhere - and to ensuring that the United States has sufficient military capabilities to deter or defeat aggression by an adversary that is larger, or under circumstances that are more difficult, than expected. This is particularly important in a highly dynamic and uncertain security environment. We can never know with certainty when or where the next major theater

war will occur, who our next adversary will be, how an enemy will fight, who will join us in a coalition, or precisely what demands will be placed on U.S. forces. Indeed, history has repeatedly shown that we are often unable to predict such matters. A force sized and equipped for deterring and defeating aggression in more than one theater ensures the United States will maintain the flexibility to cope with the unpredictable and unexpected. Such a capability is the *sine qua non* of a superpower and is essential to the credibility of our overall national security strategy. It also supports our continued engagement in shaping the international environment to reduce the chances that such threats will develop in the first place.

If the United States were to forego its ability to defeat aggression in more than one theater at a time, our standing as a global power, as the security partner of choice, and as the leader of the international community would be called into question. Indeed, some allies would undoubtedly read a one-war capability as a signal that the United States, if heavily engaged elsewhere, would no longer be able to help defend their interests. Such a capability could also inhibit the United States from responding to a crisis promptly enough, or even at all, for fear of committing the bulk of our forces and making ourselves vulnerable in other regions. This fact is also unlikely to escape the attention of potential adversaries. A one-theater war capacity would risk undermining both deterrence and the credibility of U.S. security commitments in key regions of the world. This, in turn, could cause allies and friends to adopt more divergent defense policies and postures, thereby weakening the web of alliances and coalitions on which we rely to protect our interests abroad.

Obviously, in this dynamic, uncertain security environment, the United States must continually reassess the environment, our strategy, and the associated military requirements. If the security environment were to change dramatically and threats of large-scale aggression were to grow or diminish significantly, it would be both prudent and appropriate for the United States to review and reappraise its warfighting requirements.

At least three particularly challenging requirements associated with fighting and winning major theater wars merit special attention. The first is being able to rapidly defeat initial enemy advances short of their objectives in two theaters in close succession, one followed almost immediately by another. Maintaining this capability is absolutely critical to the United States' ability to seize the initiative in both theaters and to minimize the amount of territory we and our allies must regain from the enemies. Failure to halt an enemy invasion rapidly can make the subsequent campaign to evict enemy forces from captured territory much more difficult, lengthy, and costly. It could also weaken coalition support, undermine U.S. credibility, and increase the risk of conflict elsewhere.

Another especially challenging requirement is to be able to achieve our war aims against an adversary who uses or threatens to use NBC weapons, information warfare, terrorism, or other asymmetric means against us. Because of the prevalence of such capabilities in the hands of potential future adversaries and the likelihood that such adversaries would resort to such means in the face of overwhelming U.S. conventional dominance, U.S. forces must plan and prepare to fight and win major theater wars under such conditions.

In particular, the threat or use of chemical and biological weapons (CBW) is a likely

condition of future warfare, including in the early stages of war to disrupt U.S. operations and logistics. These weapons may be delivered by ballistic missiles, cruise missiles, aircraft, special operations forces, or other means. To meet this challenge, as well as the possibility that CBW might also be used in some smaller-scale contingencies, U.S. forces must be properly trained and equipped to operate effectively and decisively in the face of CBW attacks. This requires that the U.S. military continue to improve its capabilities to locate and destroy such CBW, preferably before they can be used, and defend against and manage the consequences of CBW if they are used. But capability enhancements alone are not enough. Equally important will be adapting U.S. doctrine, operational concepts, training, and exercises to take full account of the threat posed by CBW as well as other likely asymmetric threats. Moreover, given that the United States will most likely conduct future operations in coalition with others, we must also encourage our friends and allies to train and equip their forces for effective operations in CBW environments.

Finally, as noted above, U.S. forces must also be able to transition to fighting major theater wars from a posture of global engagement - that is, from substantial levels of peacetime engagement overseas as well as multiple concurrent smaller-scale contingency operations. In the event of one major theater war, the United States would need to be extremely selective in making any additional commitments to either engagement activities or smaller-scale contingency operations. We would likely also choose to begin disengaging from those activities and operations not deemed to involve vital U.S. interests in order to better posture our forces to deter the possible outbreak of a second war. In the event of two such conflicts, U.S. forces would be withdrawn from peacetime engagement activities and smaller-scale contingency operations as quickly as possible to be readied for war.

Because both the nature of the threats we face and the way in which we will choose to fight future conflicts are changing, the forces and capabilities required to uphold this two-theater element of the strategy will differ from the "Major Regional Conflict building blocks" developed in the 1993 Bottom-Up Review. Specifically, the accelerating incorporation of new technologies and operational concepts into the force calls for a reexamination of the forces and capabilities required for fighting and winning major theater wars. As U.S. and enemy forces change in effectiveness, these force requirements will change.

PREPARING NOW FOR AN UNCERTAIN FUTURE

The fundamental challenge confronting the Department of Defense is simple, but daunting. Our armed forces must meet the demands of a dangerous world by shaping and responding throughout the period from 1997 to 2015. To do so, we must meet our requirements to shape and respond in the near term, while at the same time we must transform U.S. combat capabilities and support structures to be able to shape and respond effectively in the face of future challenges.

To meet this challenge, we must prepare now to meet the security challenges of an unpredictable future. As we move into the next century, it is imperative that the United States maintain its military superiority in the face of evolving, as well as discontinuous, threats and challenges. Without such superiority, our ability to exert global leadership

and to create international conditions conducive to the achievement of our national goals would be in doubt.

To maintain this superiority, we must achieve a new level of proficiency in our ability to conduct joint and combined operations. This proficiency can only be achieved through a unified effort by all elements of the Department toward the common goal of full spectrum dominance envisioned in *Joint Vision 2010*, the Chairman of the Joint Chiefs of Staff's blueprint for our future military operations. Implementing *Joint Vision 2010* requires developing the doctrine, education, training, organization, and materiel to support truly integrated joint operations. Achieving this new level of proficiency also requires improving our methods for integrating our forces and capabilities with those of our allies and coalition partners.

Our commitment to preparing now for an uncertain future has four main parts:

1. Pursue a focused modernization effort in order to replace aging systems and incorporate cutting-edge technologies into the force to ensure continued U.S. military superiority over time;
2. Continue to exploit the "Revolution in Military Affairs" (RMA) in order to improve the U.S. military's ability to perform near-term missions and meet future challenges;
3. Exploit the "Revolution in Business Affairs" (RBA) to radically reengineer DoD infrastructure and support activities;
4. Insure or hedge against unlikely, but significant, future threats in order to manage risk in a resource-constrained environment and better position the Department to respond in a timely and effective manner to new threats as they emerge.

Pursue a Focused Modernization Effort

Fielding modern and capable forces in the future requires aggressive action today. Just as U.S. forces won the Gulf War with weapons that we developed many years before, tomorrow's forces will fight with weapons that are developed today and fielded over the next several years. Today, the Department is witnessing a gradual aging of the overall force. Many weapons systems and platforms that were purchased in the 1970s and 1980s will reach the end of their useful lives over the next decade or so. It is essential that the Department increase procurement spending now so that we can ensure tomorrow's forces are every bit as modern and capable as today's. Sustained, adequate spending on the modernization of the U.S. forces will be essential to ensuring that tomorrow's forces continue to dominate across the full spectrum of military operations.

Exploit the "Revolution in Military Affairs"

Our modernization effort is directly linked to the broader challenge of transforming our forces to retain our military superiority in the face of changes in the security environment and in the art of warfare. Just as earlier technological revolutions have affected the nature of conflict, so too will the technological change that is so evident today. This transformation involves much more than the acquisition of new military systems. It means harnessing new technologies to give U.S. forces greater military

capabilities through advanced concepts, doctrine, and organizations so that they can dominate any future battlefield.

Because U.S. forces are committed every day to meeting the serious security demands of the present, transforming them must necessarily be a process of responsible evolution toward revolutionary capabilities. For several years, the U.S. military and DoD have been engaged in a variety of efforts to exploit the RMA. *Joint Vision 2010* has been key among these, stating that our joint forces can realize the potential of the RMA if we create and exploit information superiority to achieve full spectrum dominance through the synergy of four new operational concepts: dominant maneuver, precision engagement, focused logistics, and full-dimensional protection. Achieving this full spectrum dominance means continuing to build an integrated, complex set of systems, especially a common command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architecture to achieve dominant battlespace awareness. Important complementary efforts include:

- the development of combatant commanders' and Service visions of warfare for 2010 and beyond;
- investment in an array of science and technology programs as well as exploratory research to identify, develop, and test innovative operational concepts and force configurations that exploit new technologies;
- practical experiments being conducted by each of the Services to test new concepts and capabilities. (These experiments are the process for developing new doctrines, tactics, training, and organizational structures to fully exploit the synergy brought to the battlefield by new technologies.)

In the next several years, DoD will seek to further strengthen both the culture and the capability to develop and exploit new concepts and technologies in order to make our forces more responsive to an uncertain world.

Exploit the "Revolution in Business Affairs"

A Revolution in Business Affairs also has begun. Efforts to reengineer the Department's infrastructure and business practices must parallel the work being done to exploit the Revolution in Military Affairs if we are to afford both adequate investment in preparations for the future, especially a more robust modernization program, *and* capabilities sufficient to support an ambitious shaping and responding strategy throughout the period covered by the Review. The RBA includes: reducing overhead and streamlining infrastructure; taking maximum advantage of acquisition reform; outsourcing and privatizing a wide range of support activities when the necessary competitive conditions exist; leveraging commercial technology, dual-use technology, and open systems; reducing unneeded standards and specifications; utilizing integrated process and product development; and increasing cooperative development programs with allies. Measures such as these can shorten cycle times, particularly for the procurement of mature systems; enhance program stability; increase efficiencies; and assure management focus on core competencies, while freeing resources for investment in high-priority areas.

These measures will require changes in political and public thinking about the infrastructure that supports our flexible force. That thinking must be flexible as well, open to new solutions, and focused on the bottom-line support for U.S. forces. The QDR itself reviewed a large number of options and proposed a number of steps in this area, but much more fundamental work must be done to radically reengineer our institutions. To build the forces envisioned in *Joint Vision 2010*, it should be assumed that additional programs will need to be developed in the years beyond the Future Years Defense Program (FYDP). To afford those programs, we will need both the vision and the will to shrink and make dramatically more efficient our supporting infrastructure.

Insurance Policies

The fourth element of preparing is taking prudent steps today to position ourselves to respond more effectively to unlikely, but significant, future threats, such as the early emergence of a regional great power or a "wild card" scenario. Such steps provide a hedge against the possibility that unanticipated threats will emerge. The Department should focus these efforts on threats that, although unlikely, would have highly negative consequences that would be very expensive to counter. Although such insurance is certainly not free, in an uncertain, resource-constrained environment, it is a relatively inexpensive way to manage the risk of being unprepared to meet a new threat, developing the wrong capabilities, or producing a capability too early and having it become obsolete by the time it is needed. Such an approach can also provide an opportunity to delay or forego costly investments in future capabilities we may not need.

Among the necessary hedging steps are maintaining a broad research and development (R&D) effort; use of Advanced Concept Technology Demonstrations; contact with industries specializing in new technologies; and cooperation with allies who may develop new approaches to countering problems. An additional approach is to develop new capabilities through carefully tailored R&D and acquisition programs. For example, in missile defense, the United States has focused on R&D efforts that position us to deploy a credible national missile defense (NMD) against very limited attacks within three years of a deployment decision. Applying such an approach more broadly against new threats will require ensuring that we have the necessary intelligence capabilities for long-term strategic indications and warning, designing a process for validating such insurance requirements across the Department, and developing an insurance program profile and process that can be integrated into overall acquisition processes. Finally, R&D programs can be designed to adopt and adapt commercial technologies to military needs.

Our activities in all of these areas are only the initial steps in a continuing process. Preparing now for an uncertain future has no real end point. It must become a central component of the DoD culture and a continuing focus of our efforts.

MILITARY CAPABILITIES REQUIRED TO SUPPORT THE STRATEGY

As previously noted, perhaps the greatest challenge for U.S. forces in this planning period is to maintain the near-term capabilities required to carry out the shape and respond elements of the strategy while simultaneously undergoing the transformation

required to prepare now for the future. This means maintaining the ability to conduct the full spectrum of military operations required to protect and promote U.S. interests in the near term even as our military forces evolve to incorporate the new technologies, doctrine, operational concepts, training approaches, and organizational structures that will enable them to meet the challenges of 2015 and beyond.

Characteristics of a Full-Spectrum Force

In order to meet the near-term requirements of shaping and responding to the security environment, U.S. forces should be sized and shaped not only to meet identified threats, but to have the capabilities necessary to succeed in a broad range of anticipated missions and operational environments. That is, the U.S. military must be a capabilities-based force that gives the national leadership a range of viable options for promoting and protecting U.S. interests in peacetime, crisis, and war. The number and variety of military challenges the United States will likely face in the next 15 to 20 years require a military of sufficient size and capability to defeat large enemy conventional forces, deter aggression and coercion, and conduct the full range of smaller-scale contingencies and shaping activities, all in the face of asymmetric challenges. U.S. forces, both active and Reserve, must be multi-mission capable, proficient in their core warfighting competencies, and able to transition from peacetime activities and operations to enhanced deterrence in crises, to war. This standard applies not only to the force as a whole, but also to individual conventional units.

Such full-spectrum forces require a balanced mix of overseas presence and power projection capabilities.

Maintaining a substantial overseas presence posture is vital to both the shaping and responding elements of the strategy. Specifically, overseas presence promotes regional stability by giving form and substance to our bilateral and multilateral security commitments and helps prevent the development of power vacuums and instability. It contributes to deterrence by demonstrating our determination to defend U.S., allied, and friendly interests in critical regions and better positions the United States to respond rapidly to crises. Our presence posture enhances the effectiveness of coalition operations across the spectrum of conflict by promoting joint and combined training, encouraging responsibility sharing on the part of friends and allies, and facilitating regional integration.

Equally essential to the shaping and responding elements of the strategy is being able to rapidly move and concentrate U.S. military power in distant corners of the globe. Effective and efficient global power projection is the key to the flexibility demanded of our forces and ultimately provides our national leaders with more options in responding to potential crises and conflicts. Being able to project power allows us to shape, deter, and respond even when we have no permanent presence or a limited infrastructure in a region. If necessary, it allows us to fight our way into a denied theater or to create and protect forward operating bases.

Critical Enablers

Critical to power projection and to our unique ability to both shape the international

security environment and respond to the full spectrum of crises are a host of capabilities and assets that enable the worldwide application of U.S. military power. These critical enablers include:

- Quality people, superbly led by commanders, are our most critical asset. Our soldiers, sailors, airmen, and Marines are the bedrock of the U.S. military. They will be the deciding factor in all future operations. Recruiting and retaining the best people the United States has to offer, providing them with challenging careers and a good quality of life, and continuously training them to be the best warriors in the world will remain among our top priorities. Our strong commitment to the quality of life of all of our people remains unchanged.
- We must have a globally vigilant intelligence system to provide early strategic warning of crises and detect threats in an environment complicated by more actors and more sophisticated technology. It must cope with increased methods of deception, rapidly changing technology, and respond to the need for shorter decision cycles. Our intelligence system must be sufficiently robust to retain a global perspective even when intelligence assets are concentrated on a particular crisis. The expert judgment of highly qualified human observers and analysts is also critical. We have undertaken a major effort to expand the flow of intelligence information to all echelons on the battlefield. The expanding technical ability to deliver large quantities of information selectively to tactical commanders has enormous promise and is a key element of the RMA.
- Our global communications must allow for the timely exchange of information, data, decisions, and orders, while negating an adversary's ability to interfere in our information operations. The ability to gather, process, and disseminate an uninterrupted flow of reliable and precise information anywhere in the world and under any conditions is a tremendous strategic and military advantage. These capabilities, when combined with the ability to protect one's own information systems and at the same time negate an adversary's, result in information superiority.
- The United States must retain superiority in space. Global intelligence collection, navigation support, meteorological forecasting, and communications rely on space-based assets. To maintain our current advantage in space even as more users develop capabilities and access, we must focus sufficient intelligence efforts on monitoring foreign use of space-based assets as well as develop the capabilities required to protect our systems and prevent hostile use of space by an adversary.
- Control of the seas and airspace support both the shaping and responding elements of our strategy, allowing the United States to project military power across great distances and protect our interests around the world. A robust and effective strategic lift capability is critical and requires more than just aircraft and ships. It also requires sufficient domestic and en route support infrastructure, military equipment and stocks prepositioned in strategic locations, total asset visibility, and access to air and sea lines of communication.

Without these critical enablers, the United States military could not execute the defense

strategy described above.

CONCLUSION

In sum, in order to protect and promote its national interests in the current and projected security environment, the United States must remain engaged as a global leader and harness the unmatched capabilities of its armed forces to do three things: *shape* the international security environment in favorable ways, *respond* to the full spectrum of crises when it is in our interests to do so, and *prepare now* to meet the challenges of an uncertain future by transforming U.S. combat capabilities and support structures to be able to shape and respond effectively well into the 21st century.

[Go to Section 4](#)

[Back to Table of Contents](#)

Section IV

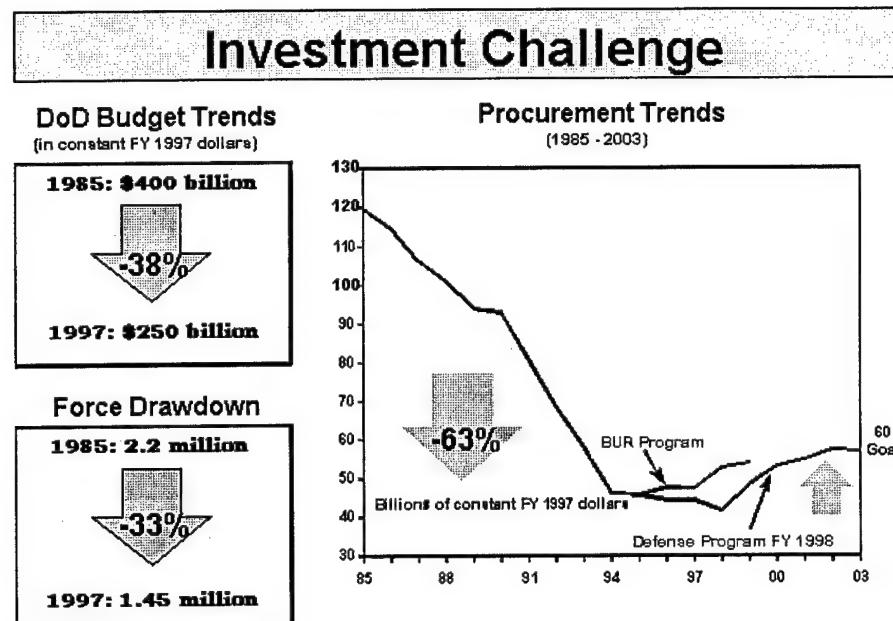
ALTERNATIVE DEFENSE POSTURES

In an effort to develop a defense program that best supports the strategy, we considered several alternative defense postures, each of which reflects a somewhat different "path" toward meeting the challenges of the projected security environment. In defining these paths, we looked closely at the assessment of the future security environment to consider more carefully the pace and sequence of changes it forecasts over the period between now and 2015. Over the next several years, we will face a series of challenges: a range of smaller-scale contingency operations; the threat of large-scale, cross-border aggression; the continued proliferation of advanced technologies; and a variety of transnational dangers. We also will confront increasingly sophisticated asymmetric challenges involving the use of chemical, biological, and possibly nuclear weapons; attacks against the information systems of our forces and national infrastructure; terrorism, as well as any number of the "wild card" scenarios. As we move into the next decade, we also face the likely prospect of different and possibly more challenging regional threats, a still more demanding range of asymmetric challenges, and the very real potential for threats to the U.S. homeland. Finally, beyond the 2010-2015 period, there is the possibility that a regional great power or a global peer competitor may emerge.

FISCAL ENVIRONMENT

For purposes of fiscal planning, the QDR projected stable annual defense budgets of roughly \$250 billion in constant FY 1997 dollars. Absent a marked deterioration in world events, the nation is unlikely to support significantly more resources for national defense. Indeed, we may yet face pressures to lower DoD's share of federal expenditures. Under these circumstances, it would be unrealistic to build a defense program on an assumption that current resource challenges could be solved by increases in the DoD budget.

Operating within the constraints of a budget of roughly \$250 billion per year, the Department has been able to sustain the force structure called for in the Bottom-Up Review while maintaining high readiness and supporting quality of life programs for our most important resource, our highly dedicated and competent people. Funding for modernization has been insufficient, however, with procurement budgets stalled near the \$40 billion level. That "procurement holiday" was acceptable in the early years following the end of the Cold War because the drawdown of our forces allowed us to retire older equipment, leaving large stocks of modern equipment purchased during the 1980s.



The Department had forecast a rebound in planned procurement funding in the last few budgets to finance modernization programs that will be needed to sustain the forces and preserve U.S. technological superiority in the future. However, that planned rebound has been repeatedly postponed in recent budgets as increases previously projected for the procurement accounts have been eroded by unexpected demands for additional funding in operating activities. Those unexpected demands have been caused by unprogrammed expenses in a variety of areas, including failure to budget adequately for future depot and real property maintenance activities, partially unrealized savings from various cost-reduction initiatives, and contingency operations. In the aggregate, these expenses have tended to offset expected reductions in operations and support accounts, which previous plans had assumed would be the source of growth in procurement funding. In an environment where the budget is not growing and the highest priority has been accorded to maintaining the forces and their readiness, the primary mechanism for adjusting to these unplanned expenses has been a yearly postponement in some planned modernization goals.

The QDR included an assessment of these recent trends and the prospects for procurement growth implied in the FY 1998 President's budget and associated six-year Future Years Defense Program (FYDP) submitted to Congress earlier this year. That plan projects ambitious growth in procurement funding from the \$42.6 billion in the FY 1998 budget, starting with a sharp rise in FY 1999 and reaching \$60 billion by FY 2001. Based on an assessment of recent patterns and the assumptions embedded in the current six-year plan, the QDR concluded that there was a potential for annual migration to unplanned expenses of as much as \$10-\$12 billion per year in the later years of the plan. Migration in that range would undermine much of the planned increase in procurement. Instead of growing to \$60 billion, procurement funding could be expected to stall in the range of \$45-\$50 billion. Some growth from the FY 1998 level could be expected from ongoing efforts to reduce the costs of defense infrastructure and from the natural transition of several major programs from development to production. Absent any further changes to the defense program, however, growth above \$50 billion would be

highly unlikely. It was in this fiscal context that alternative paths to support the strategy were considered.

ALTERNATIVE PATHS

Based on these views of the international security and fiscal environments, the QDR developed and evaluated several postures along a spectrum of the feasible approaches to meeting the strategy. All of these postures support our overall strategy. One alternative places greatest emphasis on shaping and responding in the near and midterm, while accepting greater risk in preparing now for an uncertain future. A second path emphasizes preparing now for the future, while accepting greater risk in shaping and responding in the near and midterm. And a third alternative path would attempt to balance risk over time by sustaining sufficiently large and capable forces to shape and respond in the near and midterm, while transforming the force to meet future challenges.

Path 1: Focus on Near-Term Demands

The dominant challenge on which this path is focused is meeting current dangers from regional aggressors, proliferation, and transnational threats. This path sees today's threats as sufficiently demanding to require our unwavering attention and tomorrow's threats as something for which we will have ample time to respond. The object of this path is securing international stability in the near term through global presence and deterrence of regional aggression, while largely deferring preparations for the possibility of more demanding security challenges in the future. It requires U.S. forces to maintain a robust overseas presence posture, remain capable of responding to a demanding set of smaller-scale contingency operations, and be ready to deter and, if necessary, defeat regional aggression in two distant theaters nearly simultaneously.

This path would meet the requirements of the strategy by sustaining current overseas deployments and stationing. It maintains a force large and ready enough to prevail in major theater wars using current operational plans and would meet the demand for forces to perform smaller-scale operations without overtaxing our military personnel. However, this path risks compromising the capability of U.S. forces to dominate in future conflicts by largely deferring our modernization plans.

The broad direction of this path would preserve current plans for 1.4 million active military personnel, 900,000 Reserve component personnel, and 700,000 civilians by FY 2003. It also would sustain the existing force structure, including 20 Air Force fighter wings (13 active and seven Reserve), 10 active Army divisions, 42 Reserve component brigades, 12 aircraft carriers, 131 surface combatants, and three Marine Expeditionary Forces.

Investment would increase beyond current levels only to the extent that new initiatives to streamline the infrastructure bear dividends. Compared with current program and acquisition plans, the overall level of investment (total of funding for procurement, research and development) would be likely to rise only a small amount, to roughly \$85 billion per year, with about \$50 billion expected to go toward new procurement. Absent any adjustment to the defense program, this path would continue the Department's current approach.

Path 2: Preparing for a More Distant Threat

The dominant challenge on which this path is focused is the possible emergence, after 2010-2015, of a regional great power or global peer competitor, as well as more stressing combinations of asymmetric threats. The object of this path is to ensure the long-term dominance of U.S. forces by preparing now for the emergence of more challenging threats in the future while accepting reductions in our capabilities to meet near-term demands.

This path would meet the requirements of the strategy by achieving battlefield dominance with smaller, more agile forces and dissuading future challengers from undertaking a military competition with the United States by revolutionary enhancement of U.S. military technology. However, this path accepts near-term risks by meeting potential regional conflicts with smaller forces. It also risks U.S. global leadership by reducing the presence of forces abroad.

The broad direction of this path would involve trading forces for investment. It would require reducing active duty military personnel by about 100,000 to 120,000, Reserve component personnel by 110,000 to 115,000, and civilian personnel by about 90,000 to 100,000. This would generally result in about a 20 percent reduction in overall structure, leaving 16 Air Force fighter wings, eight active Army divisions, 33 Reserve component brigades, 10 aircraft carriers, 108 surface combatant ships, and three Marine Expeditionary Force command elements with substantially reduced combat capability.

Achieving the technological dominance on which this path is focused would require a substantial increase in investment of up to \$100 billion per year, with at least \$65 billion dedicated to procurement.

Path 3: Balance Current Demands and an Uncertain Future

This path focuses on meeting both near- and longer-term challenges, reflecting the view that our position in the world does not afford us the opportunity to choose between the two. In the near term, this future involves continued smaller-scale operations and regional threats in the Arabian Gulf region and on the Korean peninsula. Over the longer term, it involves contending with the gradual emergence of potentially more capable regional aggressors and advanced asymmetric threats. The object of Path 3 is to sustain U.S. global leadership through this uncertain period by balancing capabilities to address near-term challenges with focused investments to counter longer-term threats.

This path would meet the requirements of the strategy by leveraging operational innovations and improvements in capability to strengthen the resilience of the force against changes in the threat. It also would more carefully manage somewhat smaller forces to sustain our overseas engagement. This approach would discourage prospective challengers from initiating a military competition with the United States through the combination of a robust presence of U.S. forces, the ability to respond to a full range of crises, and a steadily improving technical prowess.

The broad direction of this path would focus on balancing near-term and longer-term risk. It would require reducing active military personnel by 60,000, Reserve component personnel by 55,000, and civilian personnel by 80,000. It would result in modest changes

to the current force structure, leaving 20 Air Force fighter wings (12 active, eight Reserve), 10 active Army divisions, a smaller Army reserve component, 12 aircraft carriers, 116 surface combatant ships, 50 attack submarines, and three Marine Expeditionary Forces. (The details of these reductions are described more fully in Section V.)

These force reductions would both reduce the requirement for new systems and make possible measured increases in investment to a level of \$90 billion to \$95 billion per year, with about \$60 billion applied to procurement.

FORCE ASSESSMENT

In order to assess the three alternative defense postures against the strategy, we tested these postures and a number of other force structures against a full spectrum of operational challenges under diverse conditions, including providing overseas presence, smaller-scale contingency operations, major theater wars, and conflict with a future regional great power.

Overseas Presence Analysis. To ensure we continue to provide the right levels and types of overseas presence to meet the objectives laid out in our strategy, we undertook a detailed examination of our overseas presence objectives and posture in all regions, including the mix of permanently stationed forces, rotational forces, temporary forces, and prepositioned equipment and stocks. This study, conducted by the Office of the Secretary of Defense and the Joint Staff, built on the pre-QDR work done by the Joint Staff and involved all relevant participants, including the Services and the regional Commanders in Chief. This study examined both U.S. objectives and our current overseas presence posture and activities in each region in order to identify and explain any possible mismatches between the two. This analysis formed the basis for the development of options that informed our decisions on the appropriate levels of presence in key regions throughout the world.

The demands associated with maintaining overseas presence play a significant role in determining the size of our naval forces. To illuminate the implications of overseas presence demands, additional analysis was done examining the impact of possible naval force structure options, including aircraft carriers and amphibious ready groups (ARGs). Using the Navy's Force Presence Model, a range of aircraft carrier and ARG force structures were analyzed and compared to the forward presence currently provided in the United States European Command, United States Central Command, and United States Pacific Command areas of responsibility. Naval surface combatants force structure was analyzed in a similar fashion. The analysis concluded that a force of 11 active aircraft carriers plus one operational Reserve/training carrier was necessary to satisfy current policy for forward deployed carriers and accommodate real world scheduling constraints. A total of 12 ARGs are needed to satisfy current warfighting requirements, a force that also meets overseas presence requirements. A total surface combatant force of 110 to 116 ships can satisfy both current warfighting and presence requirements.

As with the Navy and Marine Corps, the QDR assessed the forces the Air Force and Army need for overseas presence as well as warfighting. For example, while the QDR reaffirmed the need for 20 Air Force tactical fighter wing equivalents and 10 active

Army divisions to execute two nearly simultaneous major theater wars with moderate risk, it also considered the effects of notional force reductions on overseas deployments and personnel tempo. In particular, reductions in Air Force and Army active forces could increase operating tempo in each service - already high for some force elements - if current forward deployments were unchanged. Alternatively, force reductions could lead to reductions in overseas presence and forward deployments in order to avoid additional increases in operating tempo.

Smaller-Scale Contingency Operations Analysis. In keeping with the requirement that U.S. forces be able to conduct multiple concurrent smaller-scale contingency operations, several elements of DoD-sponsored studies, games, and workshops during the QDR were designed to gain insights into the challenges these operations would pose for U.S. forces. Primary studies ranged from a series of smaller-scale contingency workshops focused on identifying and prioritizing the challenges associated with individual types of smaller-scale contingency operations to the Dynamic Commitment wargame series which assessed the implications of projected commitments of U.S. forces to simultaneous and sequential smaller-scale contingencies over the next 10 years. Together, these studies clarified the force requirements for the full range of smaller-scale contingency operations and gave us insights into the combined effects of these operations on our forces.

The Department has long known that many segments of the force have been, and probably will be, used at a very high operating tempo (OPTEMPO) in peacetime. However, the analysis showed that this phenomenon was not limited to traditional "low density/high demand" (LD/HD) units that have been identified over the past few years. Many "regular" forces were also in very high demand, including headquarters elements which were generally tasked more heavily than their subordinate forces. While it was no surprise that large, long operations significantly affected OPTEMPO, the studies found that small, long-term operations also had a significant impact. Some studies also identified operational shortfalls, and these areas will be examined in greater detail by OSD, the Joint Staff, and the Services. Additional analysis focused on identifying issues critical to ensuring that U.S. forces can transition from smaller-scale deployments and operations to major theater wars. This work not only highlighted the stresses on LD/HD units, but also found that lift was often poorly positioned to respond to a major theater war when the force was globally deployed. This analysis also demonstrated that although coalition support can be a useful force supplement, it often comes with hidden and sometimes substantial costs. These costs may be incurred in the form of increased U.S. medical support; command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR); lift; and logistics support. This extensive analysis of smaller-scale contingencies provided us with insights which helped shape the QDR force and also made clear that there is much work still to be done in assessing the impact and managing the demand of smaller-scale contingencies on our forces.

Major Theater War Analysis. Since the Bottom-Up Review, much of the warfighting analysis conducted within the Department has focused on the threat posed by regional aggressors on the scale of Iraq and North Korea. The analysis conducted during the QDR built on and expanded that detailed work. Specifically, the analysis examined the sufficiency of U.S. forces to fight and win, in concert with regional allies, two overlapping major theater wars on the Korean peninsula and in Southwest Asia in 2006

while varying four key conditions across the analysis: enemy use of chemical and biological weapons, warning time, U.S. force size, and the degree to which U.S. forces were engaged in peacetime operations at the outbreak of the first major theater war.

The results of this analysis demonstrated that a force of the size and structure close to the current force was necessary to meet the requirement set out in the strategy of being able to win two, nearly simultaneous, major theater wars in concert with regional allies. While slightly smaller forces were capable of prevailing without a significant increase in risk in the base case of the analysis, a larger force was judged necessary to conduct these operations with acceptable risk when either enemy chemical weapons were used or shorter warning times were played. Even with the current force, enemy use of chemical and biological weapons presents U.S. and coalition forces with considerable challenges. The results of the analysis also underlined the importance of several planned modernization programs, as well as increased investment in capabilities to prevent and defend against the use of chemical and biological weapons.

Regional Great Power Analysis. Although it is by no means certain that a regional great power or global peer will emerge before the 2010-2015 time frame, the Department believed it was important to analyze the potential requirements that would be posed by an aggressor with capabilities significantly greater than those anticipated for Iraq, Iran, or North Korea, so that future demands could inform near-term decisions, particularly in the area of modernization.

This analysis employed combat simulation models to examine the capabilities of U.S. forces in a major theater war against a postulated regional great power in 2014. The generic scenarios used a threat force that was roughly based on the projected capabilities of major nations not currently allied with the United States operating in a generic political environment and physical terrain. This analysis differed from our major theater war assessments in that it involved a significantly larger and more capable threat, relied on more capable allies, and employed a larger proportion of U.S. forces than the single major theater war scenarios involving North Korea or Iraq. The scenarios assumed that U.S. forces would be deployed to defend, in concert with allies, the territory of a fictitious threatened nation. The purpose of this analysis was to explore a range of outcomes by varying key conditions, projected modernization, warning times, aggressor and allied capabilities, and weapon systems effectiveness. The analysis enabled us to test our projected capabilities against a range of more challenging threats. In addition, the modernization excursions demonstrated that planned modernization programs have high payoffs in these more demanding scenarios.

Individual Service Assessments. In addition to the joint force structure assessments, individual assessments were conducted for the Services and the United States Special Operations Command that provided insights into issues not specifically or as thoroughly addressed in the other assessment areas. Each of these assessments highlighted the increases to an already high pace of operations that would occur if the existing forces, particularly its active elements, were to be reduced.

Air Force: Areas assessed included Reserve component contributions, tactical fighter posture, overall OPTEMPO, bombers, the air defense force, tankers, strategic airlift, and tactical airlift.

Army: Areas analyzed included active component personnel tempo (PERSTEMPO); substitution of Reserve component brigades for active component brigades; wartime missions and the strategic Reserve requirement for Army National Guard divisions; and potential host nation offsets for combat support/combat service support requirements.

Navy: Additional analysis focused on the operational contributions of aircraft carriers, surface combatants, submarines, amphibious ready groups (ARGs), P-3 (maritime patrol aircraft) squadrons, and overall personnel tempo.

Marine Corps: Assessments focused on warfighting impacts of force structure alternatives, OPTEMPO, and Reserve capabilities.

Special Operations Forces (SOF): Additional assessments reviewed current SOF structure and assessed the effects of structure alternatives on the ability of the SOF to carry out the missions called for in the defense strategy.

Our overall analysis determined that none of the individual requirements - overseas presence, smaller-scale contingency operations, major theater wars - is sufficient on its own for determining overall force size or composition. Size and mix must be evaluated by the Services, as well as jointly, in the context of meeting the requirements for all missions set forth in the strategy. The overall insight gained through these assessments suggests that a somewhat smaller force, with a more robust modernization program, is most capable of meeting the requirements of the strategy over time.

STRATEGIC ASSESSMENT OF ALTERNATIVE PATHS

Our assessment of the alternative paths began with the strategy. We considered how the defense posture associated with each of the paths would allow us to carry out each element of the strategy. We focused on assessing the capability of our forces to shape and respond in the face of both current and future predicted and possible challenges. A force optimized to meet just one challenge or the other would not suffice, since we need to provide for the nation's security throughout the period 1997-2015 and beyond. Thus, we looked to identify balanced capabilities that will enable us to achieve our objectives both now and into the future.

To assess the defense postures associated with each path, we identified a number of specific criteria. These ranged from the ability to sustain permanently stationed forces abroad within acceptable personnel tempo levels, to the ability to achieve our campaign objectives in a major theater war, to the ability to maintain needed levels of investment in research and development as well as the procurement of new systems. A summary of the results of these assessments follows.

Shape. The defense strategy requires forces that are capable of providing substantial levels of peacetime engagement, drawing on the full range of shaping instruments including: forces permanently stationed abroad, forces rotationally deployed abroad, forces deployed temporarily for exercises, combined training, military-to-military interactions, and programs such as defense cooperation, security assistance, International

Military Education and Training, and international arms cooperation. Our forces must be able to sustain such engagement within acceptable personnel tempo levels.

The defense posture described in Path 1 provides the most flexible set of near-term shaping options. This posture would enable us to sustain current overseas commitments, including roughly 100,000 military personnel both in Europe and in Asia, as well as rotational commitments of naval, air, and ground forces. It would provide sufficient flexibility to conduct a wide range of exercises and training missions with allies and friends. This posture could also absorb temporary increases in overseas deployments to enhance our shaping activities. Overall, this posture would meet the shaping requirements of the strategy.

The defense posture described in Path 2 would provide a much less flexible set of near-term shaping options and clearly would require the development of new, less manpower-intensive approaches to meeting our overseas presence commitments. It would require us to reduce permanently-stationed forces, affecting our commitment to keep roughly 100,000 military personnel both in Europe and in Asia. Rotational commitments of naval, air, and ground forces would decline markedly. This posture would also restrict our flexibility to exercise and train with allies and friends, or to temporarily increase overseas deployments. For many units, personnel and deployment tempo would increase significantly, potentially raising longer-term concerns about personnel retention.

The defense posture envisioned in Path 3 would provide a reasonably flexible set of near-term shaping options. This posture would allow us to sustain roughly 100,000 military personnel both in Europe and in Asia as well as current rotational deployments of naval, air, and ground forces. The needed program of exercises, training, and interaction with allies and friends could be sustained, albeit with increased stress on certain elements of the force.

Respond. The defense strategy requires that our forces be capable of responding across the full spectrum of crises - including deterring aggression and coercion in crises, conducting smaller-scale contingency operations, and fighting and winning major theater wars. They must be able to do so in the face of asymmetric challenges, including the threat or use of NBC weapons, information operations, or terrorism. This means our forces must be multi-mission capable, proficient in their core warfighting competencies, and able to transition from peacetime activities and operations to deterrence to war. Once engaged in responding to large-scale regional aggression, our forces must be able to defeat the enemy's initial attack in two theaters in close succession and then go on to achieve our overall campaign objectives.

The defense posture described in Path 1 provides the most robust near-term capabilities to respond to the full range of crises and contingencies. Our assessments indicate that this posture would allow us to deter aggressors in a crisis, conduct a full range of smaller-scale contingency operations, transition from smaller-scale contingency operations to large-scale conflict, and deter and, if necessary, defeat large-scale, cross-border aggression in two distant theaters in overlapping time frames. Over time, however, this capability could erode as the modernization program lagged.

The defense posture described in Path 2 provides fewer capabilities in the near term and accepts greater risk in responding to the full range of crises that might occur early in the period covered by the Review. This path would require us to be more selective in conducting smaller-scale contingency operations, particularly those operations that have the potential to last a long time. It places greater reliance on early and extensive use of Reserve component forces, anticipates significantly larger contributions from allies and friends, and relies on "swinging" both combat and support forces from one theater to another to defeat large-scale aggression in two regions. Although this path exploits new capabilities and operational concepts to achieve battlefield dominance with smaller overall forces over time, those capabilities would not be available in the near term.

The defense posture envisioned in Path 3 provides adequate near-term capabilities to respond to the full range of crises and contingencies - albeit at somewhat greater risk than in Path 1. With this posture, we would need to continue to be selective in conducting smaller-scale contingency operations, especially those that have the potential to last a long time, but we would remain capable of defeating large-scale aggression in more than one region. Moreover, like Path 2, but over a slightly longer period of time, this posture exploits new capabilities and operational concepts to achieve battlefield dominance with smaller overall forces, improving our capabilities to respond.

Prepare. Finally, the defense strategy requires us to prepare now to meet the security challenges of an uncertain future. This means we must pursue a focused modernization effort, continue to exploit the Revolution in Military Affairs, and take prudent actions to ensure against the emergence of unlikely but significant future threats.

While Path 1 clearly provides adequate forces and capabilities to meet near-term challenges, it invests insufficient resources in modernizing and transforming the force. The investment approach associated with this posture would allow major categories of equipment to continue to age, introduce new technologies on a slower and more limited basis, and provide little, if any, opportunity to pursue new modernization initiatives.

Path 2 places the greatest emphasis on preparing now for an uncertain future. It stresses the need to reduce forces and manpower today in order to create large-scale investment opportunities to modernize and transform the force for tomorrow. This path emphasizes the introduction of new systems and technologies - consistent with exploiting the Revolution in Military Affairs and achieving the goals set out in *Joint Vision 2010*, freeing additional funding for new program starts. This path would aggressively transform the force to meet new, potentially more demanding challenges at the cost of accepting greater risk in contending with current threats and challenges.

Path 3 focuses on preparing for an uncertain future, but not at the expense of meeting current challenges. Investment funding in Path 3 underwrites a measured modernization effort aimed at embracing the Revolution in Military Affairs and achieving the goals laid out in *Joint Vision 2010*, but not as quickly as Path 2. It introduces new systems and technologies at a reasonably aggressive rate, with modest room for new program starts. The goal for this path is to begin transforming the force to meet future challenges, while also shaping and responding to meet near-term challenges.

CONCLUSION

Based on these insights and assessments, the QDR concluded that the overall defense posture associated with Path 3 would best allow the Department to address the fundamental challenge presented by our strategy: to meet our requirements to shape and respond in the near term, while at the same time transforming U.S. combat capabilities and support structures to shape and respond in the face of future challenges. The posture described in Path 3 is not without risks, both near- and longer-term, but we believe we can mitigate these risks by more effectively managing the force and enhancing its capabilities.

The Department proceeded to determine the specific implications of Path 3 for force structure, operating posture, and modernization planning. They are described in detail in the following sections.

[Go to Section 5](#)

[Back to Table of Contents](#)

Section V

FORCES AND MANPOWER

The QDR force structure follows the broad outlines of Path 3. We will sustain the forces and capabilities needed to meet the demands of our strategy in the near term while at the same time beginning to transform the force for the future. The issue is not whether we will reshape our forces, but how and when. Across the Services, changes in force structure and personnel end strength will be made to reflect improvements in operational concepts and organizational arrangements and to protect the full spectrum of combat capability to the maximum extent possible. In this manner, we seek to attain the long-term benefits of an increased modernization program while minimizing the near-term risk of reducing combat forces.

The principal force and manpower adjustments called for in the QDR are summarized below:

ARMY

The Army will maintain four active corps, 10 active divisions - including six heavy and four light divisions - and two active armored cavalry regiments. Within that force posture, the Army is prepared to restructure parts of its force to reflect increased efficiencies in support activities and in anticipation of further organizational change, including the redesign and downsizing of its heavy divisions as it integrates the results of ongoing warfighting experiments. Given today's regional threats, elements of the Reserve component, the traditional Cold War strategic reserve can be reduced and transitioned into capabilities that have greater utility across the entire spectrum. This transition will increase depth in the Army's support structure to better support combat operations. These actions, together with the infrastructure efficiencies described in Section VIII, will result in the following personnel reductions:

- Active 15,000
- Reserve 45,000
- Civilian 33,700

NAVY

The Navy will maintain 12 aircraft carrier battle groups and 12 amphibious ready groups. The number of carrier wings will remain at 10 active wings and one reserve. Surface combatant ships will be reduced from today's level of 128 to 116 as newer and more capable systems are added to the fleet. Reflecting changes in requirements, the attack submarine force will be reduced from today's 73 to 50. Additionally, some combat logistics force ships will be transferred to the Military Sealift Command. These actions, together with infrastructure efficiencies, will result in the following personnel reductions:

- Active 18,000
- Reserve 4,100
- Civilian 8,400

AIR FORCE

The total fighter inventory will be restructured and modestly reduced from current levels. This will be accomplished by retiring older Air National Guard aircraft and replacing them with approximately 60 fighters from the active component and by converting six continental air defense squadrons to general purpose, training, or other missions. These changes will result in a more modern and flexible force of just over 12 active fighter wing equivalents, eight reserve fighter wing equivalents, and four air defense squadrons (0.8 fighter wing equivalent). The Air Force will consider further reductions in total fighter wing equivalents as additional older generation assets are replaced by next generation aircraft. In addition to its fighter force, the Air Force will maintain a total fleet of 187 bombers, 142 of them assigned to operational units. The QDR made no changes to the tanker and airlift fleets.

The Air Force is consolidating its fighter, bomber, and theater airlift squadrons, increasing the number of aircraft in each squadron while decreasing the number of squadrons. It is also reducing intermediate headquarters to streamline its command structure. These actions, together with infrastructure efficiencies, will result in the following personnel reductions:

- Active 26,900
- Reserve 700
- Civilian 18,300

MARINE CORPS

The Marine Corps will maintain an active force of three Marine Expeditionary Forces (MEFs), each comprising a command element, a division, an aircraft wing, and a service support group. The active force will continue to be supported by one Reserve division/wing/service support group. The Marines will look toward some reconfiguration of forces in the future based on ongoing warfighting experiments. In addition, reductions in Reserve end strength will be undertaken based on a thorough review of Reserve force structure. These actions, together with infrastructure efficiencies, will result in the following personnel reductions:

- Active 1,800
- Reserve 4,200
- Civilian 400

In summary, the major elements of force structure required to carry out the strategy are shown in the table below:

MAJOR ELEMENTS OF FORCE STRUCTURE				
	Programmed Force			
	FY 1997	FY 2003	QDR	
ARMY				
Active Divisions	10	10	10	
Reserve Personnel (000s)	582	575	530	
NAVY				
Aircraft Carriers (Active/Reserve)	11/1	11/1	11/1	
Air Wings (Active/Reserve)	10/1	10/1	10/1	
Amphibious Ready Groups	12	12	12	
Attack Submarines	73	52	50	
Surface Combatants	128	131	116	
AIR FORCE				
Active Fighter Wings	13	13	12+	
Reserve Fighter Wings	7	7	8	
Reserve Air Defense Squadrons	10	6	4	
Bombers (Total)	202	187	187	
MARINE CORPS				
Marine Expeditionary Forces	3	3	3	

Across the Department, QDR actions affecting both the military departments and the Defense agencies will reduce active military end strength by 60,000 personnel, Reserve end strength by about 55,000, and civilian personnel by 80,000. These reductions reflect modest changes in the Services' active combat forces. Our aim in taking these manpower reductions is to preserve the critical combat capabilities of our military forces - "the tooth" - while reducing infrastructure and support activities - "the tail" - wherever prudent and possible.

Our changes in defense manpower are shown in the table below:

DEFENSE MANPOWER				
	Programmed Force			
	FY 1989	FY 1997	FY 2003	QDR
Active*	2,130,000	1,450,000	1,420,000	1,360,000
Reserve	1,170,000	900,000	890,000	835,000
Civilian*	1,110,000	800,000	720,000	640,000

* Personnel numbers do not include Navy outsourcing initiatives planned prior to the QDR.

The QDR force provides a robust set of capabilities to shape the international environment and to continue our commitment to global engagement as called for in the President's National Security Strategy. We will maintain roughly 100,000 military personnel both in Europe and in the Asia/Pacific region. Maintaining this level of capability signals our commitment to peace and stability in both regions. In Europe, it also affirms our leadership in NATO as the alliance prepares to enlarge, reinforces our

bilateral relations with key partners, and bolsters U.S. leverage in helping to shape allied defense capabilities. In the Asia/Pacific region, maintaining this level of capability underscores our commitment to remain engaged as a stabilizing influence in the region, alleviates the potential for destabilizing arms races in the region, underwrites deterrence on the Korean peninsula and elsewhere, and strengthens our voice in international forums dealing not only with Asian security matters but also political and economic matters.

We will continue current rotational deployments of naval, air, and ground forces - both active and Reserve component forces as required - to key regions such as Southwest Asia. We will also make planned improvements to our prepositioned stocks of equipment and materiel, both afloat and ashore.

This force structure gives us an effective capability to conduct a wide range of smaller-scale contingency operations, to redeploy from smaller-scale contingency operations to a major theater war, and in concert with regional allies, to deter and, if necessary, defeat, large-scale aggression in two theaters in overlapping time frames. In the event of two nearly simultaneous major theater wars, certain specialized, high-leverage units or unique assets that the United States fields in limited numbers - such as bombers, F-117s, standoff jamming aircraft, AWACS, JSTARS, and other C4ISR platforms, selected special operations forces, and some amphibious assault forces - would very likely "swing" or be redeployed from one theater of conflict to another.

SPECIAL OPERATIONS FORCES

Special Operations Forces (SOF) provide a range of unique capabilities that have important applications across the full spectrum of conflict. Our review of SOF capabilities focused on the major elements of SOF force structure - selected Special Forces groups and battalions, SEAL teams, and Special Operations Squadrons. We concluded that most of our SOF structure is sized appropriately to meet current and anticipated missions. However, based on our assessment, some Reserve component Special Forces battalions may exceed our peacetime and wartime needs. As a consequence, we will reduce our SOF structure by two Reserve component Special Forces battalions.

NUCLEAR FORCES

Our nuclear forces and posture were carefully examined during the review. We are committed to reducing our nuclear forces to START II levels once the treaty is ratified by the Russian Duma and then immediately negotiating further reductions consistent with the START III framework. Until that time, we will maintain the START I force as mandated by Congress, which includes 18 Trident SSBNS, 50 Peacekeeper missiles, 500 Minuteman III missiles, 71 B-52H bombers, and 21 B-2 bombers. Protecting the option to maintain this force through FY 1999 will require adding \$64 million in FY 1999 beyond the spending on these forces contained in the FY 1998-2003 President's budget now before Congress.

RESERVE COMPONENT FORCES

Maintaining the integrated capabilities of the Total Force will remain essential for our strategy to succeed. In the post-Cold War era, the Reserve components have become an ever larger percentage of the Total Force and are essential participants in the full spectrum of operations, from the smallest of smaller-scale contingency operations to major theater war. Guard and Reserve forces provide trained units and individuals to fight in wartime and to support the wide range of DoD operations in peacetime. Reserve forces are part of all war plans. No major operation can be successful without them.

In peacetime, reservists provide unique skills in carrying out smaller-scale contingency operations and help relieve active units of some peacetime commitments to decrease active component personnel tempo and allow them to concentrate on higher priority tasks. For example, when President Clinton decided to use U.S. forces to help sustain peace in Bosnia, Army Reserve and Army National Guard units were mobilized and deployed to provide civil affairs, psychological operations, military police, and engineer support. Air Force Reserve component aircrues flew hundreds of missions and other reservists provided critical backfill. Navy Seabees and Marine Reserve civil affairs personnel were also activated.

During the course of the QDR, we made several important decisions regarding our Reserve component forces:

Army. The Bottom-Up Review (BUR) identified a need for Army combat forces beyond the 10 active divisions in case regional conflicts were more difficult than foreseen or unexpected circumstances arose that required additional ground forces. As a result, the BUR directed the creation of 15 National Guard brigades to be maintained at an enhanced level of readiness - known as the enhanced Separate Brigades (eSBs). This enhancement program is now almost complete. The QDR reaffirmed the continuing need for these brigades. They will provide an important hedge against adverse circumstances - such as the use of weapons of mass destruction - in major theater wars by augmenting or reinforcing active combat units.

A major issue in the QDR was determining the appropriate missions and size for our eight Army National Guard divisions. Existing plans do not call for these units to participate in major theater wars. They are assigned instead to missions which include easing Army personnel tempo in peacetime operations, providing rotation forces for extended contingencies, responding to domestic emergencies, and hedging against the emergence of a more threatening international environment.

During the Cold War, the National Guard divisions served as an important "strategic reserve," a role for the Guard reaffirmed in the BUR. At the time of the BUR, there was concern that the failure of democratization in the FSU could produce another major threat in a relatively short period of time. Since the BUR, relations with countries of the Former Soviet Union (FSU) have continued to evolve and trends in the international environment have been favorable. Forecasts see no major power threatening the United States before 2010, and potential threats after that are very uncertain. Therefore, the need for a large strategic reserve has declined, as noted by the Commission on Roles and Missions.

The QDR also reviewed other potential missions for National Guard divisions, taking as

a starting point the QDR strategy and the projected security environment. The review considered the following missions for National Guard divisions:

- Provide Combat Support/Combat Service Support (CS/CSS). Army analysis of support requirements in two major theater wars revealed a large CS/CSS shortfall. Some of these requirements could be filled by redesignating existing CS/CSS units, but a significant shortfall still remained. To fill this gap, the Secretary of the Army determined in 1996 that 12 National Guard brigades would be converted from combat units to CS/CSS units. Because this conversion would not have been completed until FY 2013, the QDR has accelerated the CS/CSS conversion program by using some of the savings from proposed reductions in Guard personnel.
- Protect rear-area security in theater. Although this mission will most likely be filled by eSBs, it could require National Guard divisional units if these are otherwise engaged.
- Backfill in Europe and for ongoing smaller-scale contingency operations. With all active U.S. combat forces sent to major theater wars, National Guard combat units could replace units deployed from Europe or backfill units deployed from ongoing smaller-scale contingency operations.
- Support the rapid deployment of active units and the mobilization of eSBs. National Guard divisional units could help active duty units deploy and support other Reserve units during their post-mobilization training.
- Perform state missions. State missions are an important function for all military forces, but especially for the National Guard. From hurricanes in Florida to floods in the Midwest to civil disturbances in California, National Guard forces have played crucial crisis response roles. This mission will continue, and the Guard will be maintained at sufficient strength to meet these challenges.

Taking these missions into consideration, the QDR determined that the strategy could be supported by a somewhat smaller Army Reserve and National Guard. The analysis indicated that a total Army reserve component reduction of 45,000 personnel is possible. Some of the savings from these reductions will be applied to the combat support/combat service support conversion programs aimed at making the remaining units more effective in carrying out their missions. When these reductions are completed, the Army Reserve components will have been reduced 32 percent from Cold War levels, compared with a 38 percent reduction in the active Army.

Marine Corps. The Marine Corps Reserve provides both peacetime and wartime augmentation to the active duty Marine Corps. In peacetime, Reserve units take on commitments that provide training for wartime tasks and also relieve active duty operating tempo. In wartime, Reserve units augment, reinforce, or backfill active duty units.

Based on experience since 1993, a reduction of about 4,200 Marines in the Marine Corps Reserve is possible. The current plan is to reduce Reserve infrastructure through a

combination of fewer active duty personnel in support of the Reserves, active Reserves, individual mobilization augmentees, and drilling Reserves. The Marine Corps will conduct a study to determine the exact nature of these reductions and/or restructuring.

Navy. The QDR calls for some restructuring of Naval Reserve forces resulting in reductions of 4,100. While some additional Reserve personnel will be required to support the transition of combat logistic force ships to the Military Sealift Command, other Reserve positions will be reduced due to the reduction of surface combatants and submarine tenders as well as the early withdrawal of the SH-2 helicopter from service. In addition, the Navy is recommending some cutbacks in overseas activities that will decrease the requirement for reservists assigned to base support.

Air Force. The Air Force has the most integrated Total Force on a day-to-day basis. This is especially true of its mobility force associate units, where Reserve personnel often work side-by-side with their active counterparts, even sharing the same aircraft. A large percentage of Air Force mobility and support missions, in peacetime and in war, are flown by Reserve personnel.

The Reserve fighter force has also been used extensively in many peacetime missions. However, some efficiencies can be gained. One initiative will consolidate Reserve aircraft into larger units, allowing savings in operations and support costs. All Reserve component fighter units will have 15 aircraft assigned. This will be accomplished by transferring a wing of active aircraft to the Reserve. The Air Force will also convert six air defense squadrons to general purpose, training, or other missions, leaving four squadrons for air defense. Also, older aircraft will be retired and replaced by aircraft transferred from the active force. Including the changes in missions, the net result is little change in total numbers of Reserve component fighters, but a significant increase in Air National Guard and Air Force Reserve capability and flexibility.

* * *

The Department of Defense will develop a legislative package to be submitted with the FY 1999 President's budget seeking drawdown transition authorities to assist our active, Reserve, and civilian personnel as we achieve the manpower reductions described in this section.

MOBILITY FORCES

We examined mobility requirements across a continuum of planning scenarios, from smaller-scale contingency operations to major theater wars and single-theater conflicts against notional regional great power adversaries. In each case, we measured the ability of DoD's long-range investment program for strategic mobility to support potential deployment requirements. The QDR reaffirmed DoD's baseline requirements for intertheater mobility, as outlined in the 1995 Mobility Requirements Study Bottom-Up Review Update.

To meet our force deployment objectives, the mobility update recommended an airlift capability of approximately 50 million ton-miles per day. The study also recommended a

surge sealift capacity of 10 million square feet, made up of fast sealift ships, large medium-speed roll-on/roll-off (LMSR) vessels, and the Ready Reserve Force. It called for an afloat prepositioned cargo capacity of four million square feet for the Army and Marine Corps and a complementary land-based prepositioning program. We plan to have six Army land-based brigade sets of prepositioned equipment (three in Europe, one in Korea, two in Southwest Asia) plus a Marine brigade set in Norway. In addition, we maintain significant stocks of prepositioned equipment afloat - three Marine Corps Maritime Prepositioning Ship squadrons, one heavy brigade set of Army equipment, and selected munitions for the Air Force. Consideration is being given to creating a third heavy brigade set for Southwest Asia. The QDR examined the extent to which these mobility forces could meet DoD's intertheater lift needs in the decades ahead. The review reaffirmed these requirements which, in turn, will guide DoD's long-range planning for strategic mobility forces.

The burdens placed on U.S. strategic mobility forces will not become less demanding in the future. To the contrary, the potential demands of peacetime engagement, reduced infrastructure at overseas bases needed to support airlift en route to a crisis, the likelihood of smaller-scale contingencies worldwide, and the increased possibility of confronting nuclear, biological, and chemical threats all pose challenges for mobility forces that were not accounted for in the mobility update. These and other key issues will be evaluated and will receive increased emphasis as DoD formulates upcoming budget requests for strategic mobility programs.

[Go to Section 6](#)

[Back to Table of Contents](#)

Section VI

FORCE READINESS

As the 21st century approaches, the readiness of U.S. military forces to meet the full range of defense strategy demands has never been more important. Ready forces provide the flexibility needed to shape the global environment, deter potential foes and, if required, to rapidly respond to a broad spectrum of threats. In addition, readiness instills the confidence our people need to succeed in a wide variety of challenging situations. In recent years, Department of Defense policy and budget guidance has explicitly made readiness the top priority. Today's challenge is to maintain this readiness edge while seeking efficiencies and improved operating procedures.

SERVICE APPROACHES

Each Service has a different approach to assuring force readiness. These different readiness approaches are driven by a number of factors, including unique force characteristics, major theater war and smaller-scale contingency response requirements, peacetime forward deployment levels, the availability of training infrastructure, perishable skills, and the need for flexibility. Less tangible factors such as morale, leadership development, and team building are also important considerations. The Army manages resources to achieve the highest possible state of readiness in its "first-to-fight" units, while maintaining the ability to deploy later-arriving units within prescribed timelines. The Navy and Marine Corps meet overseas presence and forward engagement responsibilities through cyclical readiness to maintain the high readiness requirements of forward-deployed forces. Forces not deployed are engaged in training, maintenance, resupply, and personnel turnover in preparation for the next rotational deployment. The Air Force maintains a high state of overall readiness due to the rapid response requirements for air assets in the initial phase of a major theater war or smaller-scale contingency.

Although readiness remains a top departmental priority, not all units, active or Reserve, are resourced to the highest levels. Resources are prioritized by each of the Services among major units to sustain different levels of readiness based on missions, response requirements, and force characteristics. This resource prioritization reflects the fact that transportation capacity and equipment maintenance cycles put constraints on our ability to respond. The variability in the levels of readiness that results from this prioritization is closely monitored to ensure we have the capability and flexibility to respond to changing requirements.

The current readiness approach provides a varying degree of resources to units according to the likelihood that the unit will be required to respond to a military conflict and the time in which the unit will be required to respond. Later deploying units receive fewer resources because the response time would allow the unit to get ready before it is required in theater. In fact, each Service uses readiness concepts tailored to its requirements in developing current readiness resource prioritization plans.

ASSESSMENT OF TIERING

During the QDR, an assessment was undertaken as to whether reducing the readiness of selected units would meet strategy requirements and result in significant cost savings. The conclusion of the assessment was that such "tiering" would significantly increase risk at the gain of only modest savings while limiting the flexibility required to execute the current war plans. Constraining factors include the time when units are required to be in theater, the difficulty in regaining the highly perishable skills required to operate sophisticated weapon systems, the capacity of the training infrastructure, the need to optimize match-up of deploying units with transportation assets, and the requirement to adjust plans based on the strategic and tactical situations.

For example, the Army examined reducing the readiness of all but its four Force Package I divisions - including the bulk of its permanently stationed overseas forces - to a less than fully trained status. It found that existing infrastructure and training facilities are not designed to meet the training surge required to bring units up to peak readiness in time of crisis under this posture. In addition, the mobilization system would have difficulty supporting tiered readiness surges as Individual Ready Reserve soldiers are brought in to fill out lower tier units. While lower tier units could maintain a capability to be committed to some shaping and engagement missions, soldiers assigned to those units would be at risk of having their critical warfighting skills deteriorate rapidly. Moreover, employing any of the four Force Package I divisions for peacetime engagement or smaller-scale contingencies would further increase the delay in meeting major theater war timelines, and could put the halt phase at risk. Estimated annual savings of only about \$100 million created a force that could not meet major theater war deployment timelines.

FORCE MANAGEMENT

The Chairman of the Joint Chiefs of Staff is pursuing a comprehensive effort to improve force management on a day-to-day basis to ensure that the demands of ongoing operations and exercises are sustainable over the long haul without over-stressing our people. For example, between FY 1996 and FY 1998 the Unified Commands will decrease the number of man-days required for joint exercises by 15 percent. This was achieved by compressing the length of some exercises and slightly decreasing the size of others. Additional reductions are being pursued for both joint and Service exercises.

Another force management initiative is to examine the potential for substituting one unit for another when appropriate. Some units have similar capabilities, such as the RC-135 and EP-3 electronic reconnaissance aircraft, or some Army and Marine infantry units. If the conditions warrant, these similar units can be substituted for each other.

Geographical substitution is also important. Peacetime demand is not distributed uniformly around the world, and some theaters have borne a greater brunt of the peacetime burden. Therefore, the Department has implemented a global resourcing program designed to share the burdens of response among the forces deployed in all theaters. The Department is also examining expanding the use of contractors for support functions in some situations, in order to release military support units. In addition, Reserves have been called upon to carry out selected operations. The Department is studying the costs and benefits of each approach and will use substitution if and when it is appropriate and cost-effective.

We have also implemented a Global Military Force Policy to allocate low density/high demand assets across competing priorities. The Global Military Force Policy has dramatically improved management of AWACS deployments, stabilized RC-135 and EP-3 deployments at a steady-state rate, and improved the deployment rate for EA-6Bs. Due to the success of this initiative, the Chairman of the Joint Chiefs of Staff is examining ways to develop a more comprehensive system to monitor the effects of high operating tempo. This effort will complement another planning initiative to assist in the development of theater-specific engagement plans. The scope of these initiatives will include all military activities intended to shape the regional security environment in peacetime. The combination of planning guidance and operational monitoring processes will provide a valuable set of force management tools.

However, U.S. forces will still face myriad challenges in seeking to maintain a sufficient state of readiness into the future. Advanced joint operational concepts and new technologies will increase the complexity of operations and require new and different skills. The number of different skills required will also increase as U.S. forces are asked to be increasingly multi-mission capable, able to transition from peacetime activities and operations, to deterrence, to war. In order to maintain proficiency in the wide variety of required missions and tasks in a joint environment, units will need more effective training and careful time management. Furthermore, as lift capability increases and logistics get leaner, units will be tasked to respond to crises more quickly, and conversely, will have less time to prepare. *Joint Vision 2010* calls for all military organizations to become more responsive to contingencies, with less "startup" time between deployment and employment. Finally, if not adequately managed, the demand for peacetime operations, coupled with a smaller force, could overstress personnel operating tempo and take its toll on the quality of life of military personnel that is the foundation of long-term readiness. Given these challenges, the Department intends to implement new management practices that support the defense strategy, conserve resources, and ensure our versatile forces remain prepared to carry out the multiple missions they may be called upon to perform.

QUALITY OF LIFE

The quality of our forces depends on the quality of our military personnel. The men and women who comprise today's all-volunteer military are of the highest caliber, and we must continue to strive to attract and maintain this effective force. An important element of our policy toward our people must be to provide them with a quality of life commensurate with the sacrifices we ask them to make and with the alternatives available in the private sector.

Throughout the QDR, attention was paid to those issues that affect the quality of life of our military personnel. In areas where changes in policy or practice can be made, such as the impact of high operating tempo on certain forces, we have identified those changes and will implement them. In areas where the issue is the availability of resources, the QDR recommends that adequate resources be provided in key quality of life areas. The Department remains committed to funding pay raises and other compensation. Every effort will be made to continue the Department's long-term commitment to provide adequate funding in areas such as housing, community and family support, transition assistance as we make further reductions in force, and morale and recreation activities.

Educational assistance remains a priority, including off-duty voluntary education. The fighting force of the next century must be an educated, dedicated, motivated force, and programs that keep it that way are an integral part of our force management policy as we move forward from the QDR.

[Go to Section 7](#)

[Back to Table of Contents](#)

Section VII

TRANSFORMING U.S. FORCES FOR THE FUTURE

The fundamental challenge for the Department of Defense is to ensure that we can effectively shape and respond throughout the 1997-2015 period. This means that even as we maintain the ready, versatile forces necessary to meet the challenges of shaping and responding in the near term, we must at the same time be transforming our forces, capabilities, and support structures to be able to shape and respond effectively in the future.

JOINT VISION 2010 AND THE FUTURE OF WARFARE

In an effort to guide this transformation, the Chairman of the Joint Chiefs of Staff developed *Joint Vision 2010*, a conceptual template for how America's armed forces will channel the vitality and innovation of our people and leverage technological opportunities to achieve new levels of effectiveness in joint military operations. *Joint Vision 2010* embraces information superiority and the technological advances that will transform traditional warfighting via new operational concepts, organizational arrangements, and weapons systems. It guides the Department's preparations for the future through its focus on four new operational concepts - dominant maneuver, precision engagement, full-dimension protection, and focused logistics - that together aim at achieving full-spectrum dominance.

Information Superiority: Backbone of Military Innovation. The ongoing transformation of our military capabilities - the so-called Revolution in Military Affairs (RMA) - centers on developing the improved information and command and control capabilities needed to significantly enhance joint operations. With the support of an advanced command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) common backbone, the United States will be able to respond rapidly to any conflict; warfighters will be able to dominate any situation; and day-to-day operations will be optimized with accurate, timely, and secure information. Just as much of the non-defense world has become increasingly interconnected through the growth of internetted communications, the Department of Defense is working to provide a complementary, secure, open C4ISR network architecture.

The five principal components of our evolving C4ISR architecture for 2010 and beyond are:

- A robust multi-sensor information grid providing dominant awareness of the battlespace to our commanders and forces;
- Advanced battle-management capabilities that allow employment of our globally deployed forces faster and more flexibly than those of potential adversaries;
- An information operations capability able to penetrate, manipulate, or deny an adversary's battlespace awareness or unimpeded use of his own forces;
- A joint communications grid with adequate capacity, resilience, and

network-management capabilities to support the above capabilities as well as the range of communications requirements among commanders and forces;

- An information defense system to protect our globally distributed communications and processing network from interference or exploitation by an adversary.

In warfare, the information superiority that these capabilities provide will significantly increase the speed of command, enabling forward deployed and early-entry forces to take the initiative away from numerically superior enemy forces and set the conditions for early, favorable termination of the conflict.

Dominant Maneuver. Enabling control of the battlespace through the multidimensional application of information, engagement, and mobility capabilities, dominant maneuver allows U.S. forces to position and employ widely dispersed joint air, land, sea, and space forces. Dominant maneuver will provide U.S. forces with overwhelming and asymmetric advantages to accomplish assigned operational tasks.

The dominant maneuver concept requires several enhanced capabilities. First, U.S. forces need to be lighter and more versatile. Basing logistics at sea and centralizing combat service support functions at higher tactical levels enable units to maneuver more quickly. Increasing the jointness of operations at lower tactical levels increases the forces' versatility in achieving their objectives. Second, mobility and lethality must be increased through greater reliance on netted firepower. Third, dominant maneuver requires more flexible strategic and tactical sea and air lift. Procurements of the Air Force's C-17 Globemaster, the Navy's Large Medium-Speed Roll-on/Roll-off (LMSR) ship, and the Marine Corps' MV-22 and Special Operations Force's CV-22 tiltrotor aircraft are examples of the Department's efforts to improve long- and medium-range lift.

New maneuver concepts are under development to take advantage of dominant maneuver capabilities. The Army's Strategic Meeting Engagement concept, for instance, would require projection of a force capable of achieving operational objectives over strategic distances, so called "CONUS to combat." The Marine Corps' *Operational Maneuver from the Sea* replaces the traditional notion of assaulting the shore from a series of close-in ships and then securing a beachhead prior to moving inland with the concept of an assault launched from ships far out at sea in which the invading force moves immediately to the identified objective located far inland. The MV-22 and the Advanced Amphibious Assault Vehicle are key to achieving this capability for the Marine Corps.

Precision Engagement. Precision engagement enables joint forces to shape the battlespace through near real-time information on the objective or target; a common awareness of the battlespace for responsive command and control; a greater assurance of generating the desired effect against the objective or target due to more precise delivery with increased survivability for all forces, weapons, and attack platforms; and the flexibility to rapidly assess the results of the engagement and to reengage with precision when required.

Precision engagement requires more capable attack platforms and advanced weapons and munitions in addition to the enabling support of a C4ISR common backbone. The Department will be adding to its arsenal several more capable attack platforms for engaging targets on the ground and in the air, including the F/A-18E/F, F-22, and Joint Strike Fighter tactical aircraft; the Comanche and Apache Longbow helicopters; the Crusader artillery system; and the SC-21 family of new surface combatants and possibly the Maritime Fire Support Demonstrator. The Department is also developing and fielding numerous advanced weapons and munitions including improved stand-off weapons such as the Joint Air-to-Surface Standoff Attack Missile and the Joint Standoff Attack Weapon; bombs that can be accurately delivered from medium altitude, such as the Wind-Corrected Munitions Dispenser and the GPS-aided Joint Direct Attack Munition; and a new generation of anti-armor weapons such as the Brilliant Anti-Tank and Skeet submunitions.

Precision engagement is based on intelligence about enemy forces and expert judgment as to the correct force or weapon needed to generate the desired effects. The Services are working to increase the precision of infantry weapons and improve field equipment to ensure the individual soldier or Marine is fully integrated into the advanced systems that create precision engagement. Precision engagement also extends to the full spectrum of operations in which U.S. forces are likely to participate. Precise, nonlethal weapons are also currently under development for use in smaller-scale contingencies such as noncombatant evacuations and peace operations.

Full-Dimensional Protection. Protection for U.S. forces and facilities must be provided across the spectrum, from peacetime through crisis and war and at all levels of conflict. To achieve this goal, full-dimensional protection requires a joint architecture that is built upon information superiority and employs a full array of active and passive measures at multiple echelons. Full-dimensional protection will enable U.S. forces to maintain freedom of action during deployment, maneuver, and engagement.

U.S. efforts to develop and deploy a multi-tiered theater air and missile defense architecture are a prime example of full-dimensional protection. Missile defenses must range from small area protection for joint and coalition troops, such as that provided by the lower-tier PAC 3 upgrade to the Patriot system and the Navy's Area Defense System, to wide-area defense of civilian populations and larger troop concentrations that will be provided by the upper-tier Aegis-based Navy Theater-Wide System and the Army's Theater High Altitude Area Defense (THAAD) system. The Airborne Laser, currently under development by the Air Force, will greatly improve missile defense layering by providing a boost-phase interception capability.

U.S. forces also need improved protection against chemical and biological weapons threats. New chemical and biological weapons detectors, improved individual protective gear, and a greater emphasis on collective protection are all critical to the Department's efforts to protect its soldiers, sailors, airmen, and Marines from these asymmetric threats. Full-dimensional protection also includes defense against asymmetric attacks on information systems, infrastructure, and other critical areas potentially vulnerable to non-traditional means of interdiction or disruption.

Focused Logistics. Focused logistics integrates information superiority and technological innovations to develop state-of-the-art logistics practices and doctrine. This will permit us to accurately track and shift assets, even while en route, thus facilitating the delivery of tailored logistics packages and more timely force sustainment at the strategic, operational, and tactical level of operations. Focused logistics will reduce the overall size of logistics support while helping to provide more agile, leaner combat forces that can be rapidly deployed and sustained around the globe.

Initiatives such as Joint Total Asset Visibility and the Global Combat Support System will provide deployable, automated supply and maintenance information systems for leaner, more responsive logistics. These programs, as well as a host of Service initiatives - such as the Marine Corps' Asset Tracking Logistics and Supply System - will be capable of supporting rapid unit deployment and employment and will better support the battlefield commander by eliminating redundant requisitions and reducing delays in the shipment of essential supplies. In addition, the Air Force's Air Expeditionary Force package is being used to test and refine new logistics support concepts. This move toward focused logistics should continue to result in more responsive logistics support at lower cost.

CONCEPTUAL APPROACHES TO EXPLOIT THE REVOLUTION IN MILITARY AFFAIRS

The goals set forth in *Joint Vision 2010* are the foundation for a broader effort to exploit the Revolution in Military Affairs. Indeed, the U.S. military is committed to realizing joint and Service visions of modern warfare and is taking a number of steps to do so, including studies, wargames, R&D, advanced concept technology demonstrations, and simulated warfighting experiments. Through these efforts, which are being pursued vigorously in each Service, the armed forces are identifying, developing, and testing concepts and capabilities that will ensure their ability to transform for the future.

Army. The *Force XXI* and *The Army After Next* processes are identifying new concepts of land warfare that have radical implications for the Army's organization, structure, operations, and support. Lighter, more durable equipment will enhance deployability and sustainability, and advanced information technologies will help the Army conduct decisive operations. The force will be protected by advanced but easy-to-use sensors, processors, and warfighting systems to ensure freedom of strategic and operational maneuver. Overall, the Army will require flexible, highly tailorable organizations - from individuals to small units to echelons above corps - to meet the diverse needs of future operations and to reduce the lift requirements for deployment to a theater.

The Army sustains separate, but complementary, efforts in a continuous process to implement the visions identified in *Force XXI* and *The Army After Next*. Current efforts are aimed at enabling today's soldiers and combat systems with information technology and other enhancements while beginning long-term research and development efforts. The Army's Experimental Force (EXFOR) is the vehicle for testing these innovations. EXFOR is a digitized heavy force used to identify and evaluate new operational concepts, organizational designs, advanced technologies, doctrine, and tactics through the Army's Advanced Warfighting Experiments. *The Army After Next* program is a

comprehensive initiative designed to better understand the probable nature of warfare 30 years into the future and provide focus to today's development efforts. Through an annual cycle of wargames, workshops, and conferences, *Army After Next* strives to lay the research foundation necessary for assessing the effects of increased mobility, lethality, and maneuver - leveraging radical advances in information technology, weapons, and platform speeds at both the tactical and operational levels - to ensure land power remains a strategically decisive element of warfighting well into the 21st century.

Air Force. *Global Engagement: A Vision for the 21st Century Air Force*, the Air Force's vision of air and space warfare through 2010, calls for maintaining and improving six core competencies built on a foundation of quality personnel and integrated by global battlespace awareness and advanced command and control. Air and space superiority will allow all U.S. forces freedom *from* attack and freedom *to* attack, while the Air Force's ability to attack rapidly anywhere on the globe will continue to be critical. Rapid global mobility will help ensure the United States can respond quickly and decisively to unexpected challenges to its interests. The Air Force's precision engagement core competency will enable it to reliably apply selective force against specific targets simultaneously to achieve desired effects with minimal risk and collateral damage. Air- and space-based assets will contribute to U.S. forces' information superiority, and agile combat support will allow combat commanders to improve the responsiveness, deployability, and sustainability of their forces.

The Air Force has established six new battle laboratories to implement this vision. The mission of these battle labs is to rapidly identify and validate innovative ideas that improve the ability of the Air Force to execute both its core competencies and joint warfighting. The concepts validated in the labs will be assimilated into Air Force organizational, doctrinal, training, and acquisition efforts. The six labs are concentrating on the following areas: unmanned aerial vehicles; information warfare; air expeditionary forces; space capabilities; battle management command and control; and force protection.

Navy. The Navy's future vision of warfare, delineated in *From the Sea and Forward . . . From the Sea*, and further developed in the *Navy Operational Concept*, identifies five fundamental and enduring roles: sea control and maritime supremacy, power projection from sea to land, strategic deterrence, strategic sealift, and forward naval presence. However, in the future the Navy will fulfill these roles with vastly enhanced capabilities. The Navy has embraced an RMA concept called Network-centric Warfare: the ability of widely dispersed but robustly networked sensors, command centers, and forces to have significantly enhanced massed effects. Combining forward presence with network-centric combat power, the Navy will close timelines, decisively alter initial conditions, and seek to head off undesired events before they start. The naval contribution to dominant maneuver will use the sea to gain advantage over the enemy, while naval precision engagements will use sensors, information systems, precisely targeted weapons, and agile, lethal forces to attack key targets. Naval full-dimensional protection will address the full spectrum of threats, providing information superiority, air and maritime superiority, theater air and missile defense, and delivery of naval fires. Finally, naval forces will be increasingly called upon to provide sea-based focused logistics for joint operations in the littorals.

The Navy also uses warfighting experiments to integrate technological advances and innovative operational concepts with real-world training. The At-Sea Fleet Battle Experiments overseen by the Maritime Battle Center are designed to explore new concepts and emerging systems like the Maritime Fire Support Demonstrator, Cooperative Engagement Capability, and theater ballistic missile defense to evaluate their effects on fleet capabilities and determine future requirements. These intensive experiments are limited in number to maintain their quality and are combined with other fleet exercises to maximize participation. Completed earlier this year, the first of these experiments, Fleet Battle Experiment Alpha (conducted off southern California in March 1997), evaluated C4ISR capabilities, requirements for a Sea-Based Combined Joint Task Force, and other emerging concepts.

Marine Corps. *Marine Corps Operational Maneuver from the Sea* foresees warfare that requires tactically adaptive, technologically agile, opportunistic, and exploitative forces. Individuals and forces must be able to rapidly reorganize and reorient across a broad range of new tasks and missions in fluid operational environments. The Marines will still need to project power ashore for a variety of potential tasks ranging from disaster relief to high-intensity combat.

The focus of Marine Corps RMA efforts is on the enhancement of the individual Marine and his or her ability to win in combat. The Marine Corps Combat Development System focuses on generating the most effective combination of innovative operational concepts, new organizational structures, and emerging technologies. The Commandant's Warfighting Laboratory at Quantico, Virginia, institutionalizes the Marine commitment to innovation. Through the five-year "Sea Dragon" program, the Marines have developed an extensive experimentation plan divided into three phases, each culminating in an Advanced Warfighting Experiment:

- *Hunter Warrior* - designed to examine naval power projection in a dispersed, non-contiguous littoral battlespace, enhanced fires and targeting, and C4I and the "single battle."
- *Urban Warrior* - a two-year effort, begun this year, to explore operations in urban, near urban, and close terrain.
- *Capable Warrior* - combining virtual and live forces comprising operational level deception and maneuver in response to crisis, with the objective of containing or obviating an incipient major theater war.

In the joint world, simulation centers such as the Joint Warfighting Center and the Joint C4ISR Battle Center are developing future *Joint Vision 2010* operational capabilities by evolving and blending innovative concepts and emerging technologies.

EXPLORATION OF THE RMA IN THE LONG TERM

By conducting several research efforts that look out to 2020 and beyond, the Department seeks to ensure it will be prepared for a range of plausible futures. The Army's Dominating Maneuver wargames and workshops explore operational concepts and RMA force characteristics that might be relevant in the 30-year time frame. The Air Force is

now planning its transition from an air and space force to a space and air force through the Chief of Staff's institutionalized long-range planning process, which has identified new operational concepts and the paths to implement those concepts. The Chief of Naval Operations' Strategic Studies Group likewise has concept generation teams that are investigating future naval warfare concepts, from rotational base issues to asymmetric capabilities and responses. In addition, the Marine Corps' Operational Concepts wargames and New Science projects are examining nonlethal and other innovative technologies, as well as the application of algorithms from other disciplines, such as the natural sciences, to military art and science.

OSD's Office of Net Assessment has also developed an Operational Concepts Wargaming Program with support from the Services. This program will explore concepts such as dominant maneuver, Air Force modernization concept alternatives, "future Navy," space war, and information warfare. The Department's science and technology (S&T) efforts are directly linked to *Joint Vision 2010* concepts and are guided by concept-related Defense Technology Objectives (DTOs). Each DTO identifies a specific future technology advancement that will be developed or demonstrated, the anticipated date of technology availability, and the benefits likely to result from the technology advance. For example, the Future Combat System (FCS) offers the potential of executing future dominant maneuver concepts with smaller, lighter, and more mobile ground forces. FCS technology innovation efforts focus on achieving leap-ahead capabilities for a ground-combat vehicle in the areas of mobility, lethality, survivability, deployability, and sustainability. Similarly, the Advanced Ground Vehicle Mobility Systems DTO aims to increase the speed, mobility, employment flexibility, and durability of future ground vehicles.

Additionally, the Defense Advanced Research Projects Agency is investigating a satellite constellation, known as "Starlite," that can provide on-demand radar imagery anywhere and in near real-time to the theater commander, and a "Situational Awareness System" that will link the Internet to the warfighter via an arm-mounted terminal.

These are just a sampling of the long-range planning and experimentation activities ongoing in the Department.

QDR MODERNIZATION DECISIONS: SUPPORTING THE TRANSFORMATION OF U.S. FORCES

The Department's extensive modernization effort, which will reach the aggregate procurement spending objective of \$60 billion per year shortly after the turn of the century, directly supports efforts to realize the modern, joint capabilities called for by *Joint Vision 2010* and to exploit the RMA in accordance with the "prepare now" tenet of our defense strategy. The QDR modernization review focused on a number of programs for evaluation and decision, in order to ensure that future U.S. forces have modern, technologically superior equipment, that systems are effectively integrated across platforms and Services, and that programmatic and operational risks were weighed in the context of force requirements. Several of these decisions resulted in programmatic changes, highlighted below.

C4ISR. Because modernization of our forces depends on a strong C4ISR common

backbone and because these systems require significant resources, the Department undertook a hard and sweeping look at our entire C4ISR effort. While a number of programmatic adjustments were evaluated, we did not change the general focus and amount of resources devoted to C4ISR in the QDR. The net effect of the programmed investments will be to substantially improve our awareness of various types of enemy forces in the areas adjacent to our forces and at longer ranges as well. We will continue to evolve toward more interoperable battle management systems with the initial deployment of the Global Command and Control System (GCCS) below the joint command level and into operational Service units. The Department is committed to achieving information superiority and to the resolution of remaining challenges over the next several years. A significant C4ISR challenge is to overcome deficiencies in our ability to move information in a timely manner to the lowest tactical levels. We will fund efforts to meet such challenges by correcting certain imbalances in the overall C4ISR program and by more aggressively using advanced technologies to reduce ongoing program costs. Decisions on C4ISR will be made in the context of other decisions on force structure, force design, weapons platforms, munitions, and information-enabled operational concepts.

JSTARS. The Joint Surveillance and Target Attack Radar System (JSTARS) provides radar data on fixed and moving targets from an airborne battle management platform that enhances our combat forces' ability to operate throughout the battlespace in responding to crises. In conflict, the JSTARS tracking data can be used by on-board and ground-based controllers to help direct timely attacks on a wide range of targets. Our approach to system development provides important enhancements to the U.S. JSTARS fleet and reflects our commitment to support NATO's consideration of the Alliance Ground Surveillance (AGS) capability.

The Department has decided to reduce the overall U.S. JSTARS fleet from 19 to 13 aircraft. A fleet of this size will provide round-the-clock coverage needed in a major theater war. Some portion of these aircraft would have to be redeployed in the event of a second major theater war. In addition, this fleet could be augmented by NATO JSTARS aircraft, if the allies collectively agree to fund the NATO AGS capability. The decision to limit the JSTARS buy also allows for funding to support the U.S. share of a four or six aircraft NATO AGS program. The six plane buy would allow for broader NATO participation, supporting our 30 April 1997 "fast-track" offer to our NATO allies.

We will also explore the potential for supplementing radar coverage of enemy force movements from long-endurance unmanned aerial vehicles (UAVs). In addition, our approach provides funds for key upgrades to U.S. JSTARS, including radar upgrades and improved connectivity to weapon platforms and broadcast intelligence.

Tactical Aircraft. Our review of tactical aircraft programs focused on the F-22 Raptor, the F/A-18 E/F Super Hornet, and the Joint Strike Fighter (JSF). We assessed alternatives to these programs from the standpoint of both warfighting risk and acquisition cost. Termination of any of the three fighter programs was not considered prudent given the warfighting risk of such a decision and the significant adverse impact it would have on technology development and the defense industrial base. However, the Department also needed to balance such warfighting risk against the need to use scarce modernization funds prudently and to support acquisition program stability by planning

for that which we can truly afford. The interrelationships among these programs were a significant factor, including the direct transfer of derivative avionics and propulsion technology from the F-22 to the JSF.

F-22. The F-22 is the Air Force's replacement for the F-15C/D in the air superiority role; it will also incorporate substantial air-to-ground capability. The F-22 will have a much-reduced radar signature, an ability to cruise at supersonic speed, and a new generation of avionics. It can also carry precision munitions that enable it to conduct air-to-ground attacks anywhere on the battlefield.

We have decided to decrease total procurement of the F-22 from 438 to 339 aircraft, consistent with its much greater capability compared to the F-15, as well as our overall affordability concerns and force structure decisions. This decision will provide three wings of this stealthy air supremacy platform. Consistent with this decision, we are slowing our ramp-up to full production of the aircraft. We will buy 12 fewer F-22s during Low-Rate Initial Production, thereby decreasing concurrency in the program. The F-22 program will build to a maximum production rate of 36 aircraft per year, down from the original planned rate of 48 per year, ensuring overall affordability beyond the program period. In the future, the Department will consider replacements for the F-15E and the F-117 long-range interdiction aircraft when they reach the end of their service lives beyond 2015. To make that decision, the Department will consider a range of alternatives, including the possible acquisition of variants of the F-22 for these roles.

F/A-18E/F. The Navy's principal fighter/attack acquisition program, the F/A-18E/F is an enlarged, much-improved follow-on to the proven F/A-18C/D, currently the backbone of carrier aviation. The E/F model has significantly greater range, carrier payload recovery capability, and survivability. It also will be able to function as a tanker for in-flight refueling. The F/A-18E/F affords valuable growth capability and more payload flexibility to effectively employ the next generation of stand-off weapons.

The Navy will plan on procuring a minimum of 548 F/A-18E/Fs, building up to a maximum rate of 48 aircraft per year in contrast to the previously projected peak rate of 60 aircraft per year. The ramp up to the full production rate of 48 per year will be delayed two years, from FY 2000 to FY 2002, in order to ensure funding balance during the program period. This will result in a reduction of 24 aircraft in the program period. The Navy will transition to the JSF as soon as the costs and effectiveness for the JSF are well understood and the aircraft is demonstrated to be superior to the F/A-18E/F. Depending upon the pace of JSF progress, this transition may begin as early as FY 2008, when initial production of the JSF is planned for the Navy. Should JSF development be delayed, additional F/A-18E/F aircraft beyond 548, to a total as high as 785 aircraft, may be added later as appropriate to sustain planned force structure. In the future, the Department will also consider variants of the F/A-18E/F as possible candidates for the eventual replacement of the EA-6B electronic warfare aircraft.

Joint Strike Fighter. The JSF will be the Department's largest acquisition program and the first to develop a family of common aircraft for use by land- and sea-based aviation forces. The JSF will be employed by the Air Force, Navy, and Marine Corps in variants configured for each Service's specific needs. This tri-Service program reflects the judgment that developing three major new combat aircraft simultaneously would have

been prohibitively expensive. The JSF is anticipated to have a substantial mission radius, high survivability, and will use advanced-technology design, materials, and manufacturing techniques.

Total procurement of the JSF was reduced to 2,852 aircraft, down from 2,978 in our previous long-range plans. A Joint Staff-led review of Service plans showed the prospect for inventory management efficiencies through such a reduction.

In addition to decreasing the total buy of JSF, the maximum planned production rate of 194 aircraft will be reached in 2012 rather than 2010, easing overall modernization affordability. Uncertainties in prospective JSF production cost warrant careful Departmental oversight of the cost-benefit tradeoffs in design to ensure that modernization and force structure remain in balance over the long term.

Marine Corps V-22 (MV-22) Osprey. The MV-22's unique tiltrotor design represents leap-ahead technology in supporting combat forces. Two changes in the MV-22 program are now planned. First, recognizing the urgent need to replace the Marine Corps' aging fleet of Vietnam-era medium lift helicopters, the Department will accelerate MV-22 procurement to a long-term rate of 30 aircraft per year in 2004. Based on the MV-22's superior capability relative to the CH-46 helicopter it will replace, the Department will reduce the MV-22 program objective from 425 aircraft to 360. By combining accelerated procurement with a reduced total buy, we will exploit the Osprey's demonstrated performance, dramatically improving our midterm operational capabilities while saving over \$3 billion in total program costs. The new program of 360 MV-22s reflects streamlined logistics requirements for the Corps' infantry battalions and divisions which are anticipated from the ongoing Marine initiatives such as the Combat Service Support Element Enterprise and the Sea Dragon advanced warfighting experiments. The new objective of 360 Ospreys also reflects the benefits of this modern aircraft's greatly increased reliability and maintainability. The accelerated procurement of the MV-22 reflects our commitment to modernization of Marine Corps combat capabilities, incorporating revolutionary 21st century technology.

B-2 Bombers. The Department has decided not to propose procurement of any additional B-2 bombers beyond the currently planned force of 21 aircraft. The assessment that led to this decision examined numerous trade-offs of other capabilities for more B-2 bombers in the broader context of the requirements identified during the QDR. It was aided by analysis conducted as part of the Deep Attack Weapons Mix Study that examined the advantages and disadvantages of reducing elements of our current force structure - other bombers, sea-based aviation, and land-based aviation -in order to procure additional B-2 bombers. The analysis showed that in a majority of the cases examined, additional B-2s deployed quickly to a conflict could improve our ability to halt an adversary's advance during the opening days of a major theater war. This was especially true in cases where there would be little or no warning of the conflict or where our tactical aircraft would be restricted in their access to the theater. In addition, the B-2 could use less expensive munitions in more missions than existing aircraft. This advantage, however, diminishes as other low observable aircraft, particularly the Joint Strike Fighter, enter the force.

Against these advantages of the B-2, the analysis weighed several disadvantages. First,

the B-2 would not provide the full range of warfighting and shaping capabilities offered by the forces it would replace. For example, missions such as air superiority, reconnaissance, and forward presence would suffer. Second, the additional B-2s did not provide the same weapons delivery capacity per day as the forces that would have to be retired to pay for B-2s. Although this difference is less important in the halt phase because of the B-2's superior survivability, it has greater impact throughout the remainder of the conflict after the adversary's air defenses have been substantially suppressed. Third, existing forces would have to be retired immediately to pay for the additional B-2s. Even then, the savings from retiring the forces are not enough to offset the large up-front investment for the B-2s in the FYDP. And, there would be a loss in warfighting capability during the decade or more between when the outgoing forces were retired and all the B-2s were delivered.

Deep Strike/Anti-Armor Weapons and Munitions. In the wake of the Deep Attack Weapons Mix Study, the Department determined that the current munitions programs, with modest adjustments, will provide the capability to defeat potential aggressors in the years ahead. The next generation of munitions will give our forces superior precision engagement capability against projected threats. The fielding of unitary and cluster bombs that can be delivered accurately from altitudes above the effective range of enemy anti-aircraft artillery and manportable surface-to-air missiles, standoff weapons that avoid dense concentrations of air defenses, and highly effective precision munitions will increase the survivability and lethality of our forces in future conflicts as called for in *Joint Vision 2010*.

For the "deep battle," the following systems will be procured in accordance with existing plans: the Wind-Corrected Munitions Dispenser carrying Combined Effects Bomblets or the "brilliant" Skeet anti-armor submunition; the Army Tactical Missile System with Brilliant Anti-Armor Submunitions (ATACMS BAT/BAT Pre-Planned Product Improvement); the product improved version of the Sensor-Fuzed Weapon, and the Joint Stand-Off Weapon (JSOW) with a unitary warhead. In addition, we will consider decreasing our buy of JSOW variants carrying Combined Effects Bomblets and Skeet; increasing our buy of Joint Air-to-Surface Stand-off Missile and laser-guided bombs; and changing the mix of Joint Direct Attack Munition variants. We will also continue Hellfire II production while analyzing the appropriate mix of Hellfire II and Hellfire Longbow missiles.

To maintain a balanced approach for the "close battle," the Department is continuing to evaluate a number of candidate anti-armor systems. Our evaluations to date support our commitment to the ongoing Javelin program as planned and demonstrate the potential importance of the "Follow-On to TOW (Tube-Launched Optically Tracked Wire Command-Link Guided Missile)" and M829E3 armor-piercing tank round. Working with the Services, the Department will reach decisions on the mix of these close-battle anti-tank weapons during the development of the next defense program.

Ship Modernization. The Navy's ship modernization program will ensure the United States retains the ability to control the seas and project power ashore in peacetime and across the broad spectrum of contingencies. Procurement of the CVN-77, the tenth *Nimitz*-class carrier, continues the modernization of the nation's carrier fleet at a force structure level of 11 active carriers and one Reserve/training carrier. A total force

structure of 12 carriers will allow the United States to sustain carrier battlegroup deployments at a level that helps shape the international security environment in support of our security strategy and commitments. Additionally, contingent on a reevaluation of peacetime overseas presence requirements, submarines will be procured at a long-term rate of one-and-one-half to two per year, consistent with a target force level of 50 attack submarines.

Army Ground Combat. The Army faces both near- and long-term challenges in executing its currently planned modernization program. Reductions in operations and support costs will help us achieve needed modernization funding increases and will provide some additional resources above those previously planned. These additional resources will address a number of the Army's most pressing modernization needs. For example, the Army will accelerate the fielding of a digitized (Force XXI) corps and complete Army National Guard Division Redesign more quickly.

"Digitization" involves the use of modern communications capabilities and computers to enable commanders, planners, and shooters to rapidly acquire and share information. This improved awareness will revolutionize the conduct and tempo of all phases of combat operations. The results of recent Army Warfighting Experiments at Fort Irwin and follow-on experiments will be used to determine the force structure, materiel requirements, and doctrine for digitized units. The Army had planned to field the first digitized corps in 2006. This corps now can be fielded one to two years sooner.

The Army National Guard Division Redesign program will relieve an important warfighting shortfall by converting lower priority combat brigades into higher priority CS/CSS forces. This program (described in detail in the Reserve Component Forces section) was established last summer but funding shortfalls have restricted the pace of conversion. The Department will now accelerate the pace by increasing both near-term and midterm funding and completing the program on a more realistic time line.

Although these actions will improve the Army's longer-term investment program, additional measures will be required to achieve a balanced modernization program. In the middle of the next decade, the RAH-66 Comanche helicopter and the Crusader self-propelled howitzer will enter production. Our review affirms that both systems are necessary to the Force XXI concept. Savings from planned Army personnel reductions alone will be insufficient to support both programs. Additional funds from sources such as base realignments and closures are critical to procuring these systems on the projected schedule. Programmatic changes, including reducing currently projected peak procurements and rephasing other major programs, may also be necessary.

Theater Ballistic Missile Defense. The QDR thoroughly reviewed all theater ballistic missile defense programs and identified programmatic issues in the THAAD system and Medium Extended Air Defense System (MEADS). Technical failures in the THAAD test program have required its restructure and brought into serious question the program's ability to meet the 2004 target date. This restructure will improve the stability of the program, lower its risk, and allow us to explore increased commonality between the interceptor missiles and kill vehicles used in THAAD and the Navy Theater-Wide system. The MEADS program, a cooperative theater missile defense development effort with Germany and Italy, is currently unfunded beyond FY 1998. In the QDR, the

Department decided to fund the program through FY 1999. The QDR reaffirmed our approach to the high priority Patriot Advanced Capability-3 and Navy Area Defense lower tier systems, Navy Theater-Wide upper tier system, and the Airborne Laser program. In addition, the Department is committed to continue pursuing increases in capability in attack operations to address the theater ballistic missile and cruise missile threats prior to launch, thereby reducing the stress and reliance on intercept systems.

National Missile Defense (NMD). Developing U.S. capabilities to deploy a National Missile Defense that will provide protection against a limited ballistic missile attack is a high national priority. The Administration established a development program aimed at creating the option to make a decision on deployment as early as FY 2000, if the threat warrants. The goal of the program is to be able to deploy an Initial Operational Capability within three years after such a decision is made. We determined in the QDR, however, that the existing NMD program could not meet these objectives within the programmed budget. The analysis further concluded that substantial additional funds should be directed to NMD over the next three years, but noted that even with additional funds, NMD will remain a program with very high schedule and technical risk. The Department has decided to add the needed funds totaling about \$2 billion. However, the precise amount and allocation over the coming years is still under review.

Cruise Missile Defense (CMD). In light of intelligence estimates that a cruise missile threat to U.S. forces may emerge after 2000, DoD has a substantial theater Cruise Missile Defense program. This effort could provide significant assistance to a national cruise missile defense effort. Over the next several years, the Department has decided to increase emphasis on national cruise missile defense.

Navigation. Upgrades to the space-based Global Positioning System (GPS) and compliance with Global Air Traffic Management (GATM) rules that will be coming into force over the next several years will require significant future expenditures which are yet to be determined. The navigation challenge is to efficiently implement upgrades to the GPS satellite constellation and user navigation equipment that allows us to respond effectively in time of crisis and to facilitate our participation in the GATM system and other navigation and safety efforts. The March 1996 Presidential Decision Directive (PDD) on GPS directs the Department to pursue the protection of our access to GPS positional information in the face of potential enemy electronic jamming and the ability to deny enemy use of GPS. A program decision in support of this directive is scheduled for late 1998. DoD efforts to ensure compliance with the new GATM regime are being coordinated by the Federal Aviation Administration (FAA) and the International Civil Aviation Organization (ICAO) and will involve significant investment to properly equip the Department's very large fleet of aircraft. The Department must introduce the needed navigation equipment to comply with the new FAA/ICAO procedures in order to preserve the worldwide deployment capability of our forces, avoid delays, and enhance air-space management capability.

TRANSFORMING OUR RESPONSE TO ASYMMETRIC CHALLENGES

Integral to our efforts to transform the Department for the future are our efforts to address a range of asymmetric challenges. Measures to prepare our forces to face these challenges, from fielding new capabilities to adapting how U.S. forces will operate in

future contingencies, are already underway. To ensure that U.S. forces will be able to respond effectively to such challenges through the year 2010 and beyond, the Office of the Secretary of Defense, the Joint Staff, the Services, and the CINCs are working together in several areas. Chief among these are threats of NBC weapons use, terrorism, and information warfare.

Counterproliferation. In recent years, the Department has made substantial progress toward fully integrating the risks associated with an adversary's NBC weapons use into our military planning, acquisition, intelligence, and international cooperation activities. This need was underscored in the major theater war assessment done in the QDR.

Accordingly, the Secretary of Defense has increased planned spending on counterproliferation by approximately \$1 billion over the program period, particularly for protective measures against chemical weapons. With this additional investment, the Department will continue to strengthen existing U.S. capabilities. These efforts will be critical to ensuring that U.S. forces have the counterproliferation capabilities they need as we move into the 21st century.

The QDR underscored two key challenges that the Department must meet as part of its strategy to ensure future counterproliferation preparedness: the Department must *institutionalize* counterproliferation as an organizing principle in every facet of military activity, from logistics to maneuver and strike warfare, and *internationalize* those same efforts to encourage our allies and potential coalition partners to train, equip, and prepare their forces to operate with us under NBC conditions.

To advance the institutionalization of counterproliferation concepts, the Joint Staff and CINCs will develop an integrated counter-NBC weapons strategy that includes both offensive and defensive measures. The U.S. military will continue to develop regular individual, unit, joint, and combined training and exercises that incorporate realistic NBC threats. Such training and exercises are the best means for testing operational concepts and doctrine and for fostering innovation and adaptation. Early deployment or pre-positioning of NBC defense and theater missile-defense capabilities and personnel into theaters of operations will also be explored.

Ongoing DoD programs focused on future counterproliferation capabilities include:

- Theater missile defense programs;
- Development of a capability to defeat hard and/or deeply buried targets;
- Biological weapon detection and emergency response programs;
- Chemical detection, protection, and decontamination;
- Increased funding for special operations forces counterproliferation activities.

Complementing these efforts to institutionalize counterproliferation concepts and enhance our ability to operate in NBC environments are U.S. efforts to internationalize counterproliferation by encouraging allies and friends to adapt similarly. Given the likelihood that U.S. forces will fight in coalition with others in the future, combined

readiness is a key concern. Unless they are properly prepared to deal with NBC threats or attacks, allies and friends may present vulnerabilities for a U.S.-led coalition. In particular, potential coalition partners cannot depend on U.S. forces to provide passive and active defense capabilities to counter NBC threats. U.S. counterproliferation cooperation with its NATO allies through the Senior Defense Group on Proliferation provides a template for improving the preparedness of long-standing allies and potential coalition partners. In particular, efforts to strengthen international counterproliferation partnerships are currently underway with allies and friends in Asia.

Force Protection and Combating Terrorism. Over the past few years, and particularly following the attack on Khobar Towers, the Department has moved swiftly to reduce American vulnerability to terrorist attacks and to make U.S. forces as preeminent in combating terrorism as they are in other forces of warfare. The Department will ensure that U.S. forces operate under mandated standards for combating terrorism, improve intelligence collection, distribution, and information-sharing with allies, and strengthen our capability to protect citizens and military personnel from chemical or biological attacks with special emphasis on high threat regions. Future efforts will focus on enhancing both antiterrorism and counterterrorism capabilities and will range from policy initiatives to planning and training improvements, and the development of new operational systems to combat terrorism.

To ensure that the U.S. military has highly effective antiterrorism capabilities in the future, the Department will undertake several initiatives. The Department will enhance force protection training using a mobile "train the trainers" approach to reach senior leaders and their key staff. The Department also will continue to improve the newly created Chemical/Biological Incident Response Force, a Marine unit that performs consequence management in chemically and biologically contaminated environments. Finally, the Department will continually reassess the vulnerability of its facilities at home and abroad and make necessary improvements to safeguard their physical security.

The Department is also committed to improving sensitive counterterrorism training and technologies - those used to deter, defeat, and respond vigorously to terrorist attacks over the next decade. Counterterrorism forces will continue to receive the most advanced training available, exercise frequently to maintain proficiency, and develop new skills, and work with foreign peers to hone combined skills as well as develop mutual trust and confidence.

Although U.S. forces currently possess sophisticated systems for combating terrorism, the Department is increasing its research and development investment in this area. This funding will support several state-of-the-art development programs including: systems to detect, assess and disable large vehicle bombs; stand-off explosive detection capabilities; pre- and post-construction blast mitigation techniques for physical structures; capabilities to maintain surveillance of and tag and track harmful materials that can be used in terrorist attacks; and improvements to robotic vehicles used in counterterrorism operations.

Information Operations. Efforts to exploit information technology to adapt and

transform the U.S. military are well underway. To date, the Department has directed most of its efforts in this area toward protecting critical U.S. infrastructure against hostile information operations and developing U.S. information operation capabilities for use in peacetime engagement activities, smaller-scale contingencies, and major theater wars.

Although our current capabilities are adequate to defend against existing information operations threats, the increasing availability and decreasing costs of sophisticated technology to potential adversaries demand a robust commitment to improve our ability to operate in the face of information threats as we approach the 21st century. Critical to ensuring that ability will be the institutionalization of information operations - that is, the integration of information operations concepts into military planning, programming, budgeting, and operations. In the context of *Joint Vision 2010*, we will continue to develop additional guidance to strengthen information assurance - the protection, integrity, and availability of critical information systems and networks. Further, we will allocate adequate resources for these efforts within our information technology investment programs and improve the Defense-wide planning and implementation process, regularly assessing funding adequacies for all information assurance program components.

Defense against hostile information operations will require unprecedented cooperation between the Department of Defense, other federal agencies, the armed forces, commercial enterprises, our allies, and the public. The Department is working closely with the Presidential Commission on Critical Infrastructure to develop this cooperative relationship. Technical measures to protect military information systems, both hardware and software, are being greatly expanded, and all Services now provide capabilities to test and assess their information networks and systems. Capabilities to protect information systems must also extend beyond traditional military structures into areas of civilian infrastructure that support national security requirements, such as the telecommunication and air traffic control systems.

Offensive actions to disrupt our adversary's access to information are also part of U.S. military capabilities. Such capabilities will be increased in the future to ensure that the United States maintains information superiority during a conflict.

CONCLUSION

Preparing now for future challenges is critical to the success of our defense strategy throughout the 1997-2015 time frame. The Department is committed to implementing and underwriting *Joint Vision 2010* and complementary Service visions. Efforts to modernize our current force are integral to that implementation; even more important are efforts to leverage new technologies to harness the Revolution in Military Affairs through new operational concepts, new doctrine, and, ultimately, organizational changes. In addition, the Department must institutionalize innovative investigations, such as the battle laboratories and warfighting experiments, to ensure future concepts and capabilities are successfully integrated into the force in a timely manner. Finally, we must remain ever vigilant against asymmetric strategies that threaten our forces and citizens by strengthening efforts to reduce their likely use and potential impact and by developing a range of response options. Through all of these efforts and activities, DoD is transforming itself at a substantial pace.

[Go to Section 8](#)

[Back to Table of Contents](#)

Section VIII

ACHIEVING A 21ST CENTURY DEFENSE INFRASTRUCTURE

Our military forces and operations are changing dramatically in response to the changing security environment and advances in technology. The way we support the warfighter must also change. The Department must be leaner, more efficient, and more cost effective in order to serve the warfighter faster, better, and cheaper. We not only have the opportunity to change, we have the requirement to change. The forces envisioned in *Joint Vision 2010* will require a radically different support structure. Achieving those forces will also require steadily increasing investments. To afford these investments, the Department will need to achieve offsetting efficiencies in support operations. The best source of funds for those investments is within the Department's support operations. Consequently, the search for new ways in which DoD could improve its support operations was sweeping and deep.

The DoD infrastructure includes a diverse set of activities carried out by an even more diverse set of organizations. Foremost among them are installations for the operating forces, training programs for military personnel, logistics support, central personnel services, and headquarters functions. The organizations that performed these functions accounted for 48 percent of total DoD employment (military and civilian) in FY 1997. In addition, 7 percent of DoD employees provide medical care for active duty and retired military personnel and their family members, and another 6 percent perform functions related to science and technology programs and central command, control, and communications services. In sum, *61 percent of people employed by the Department in FY 1997 are performing infrastructure functions.*

During the post-Cold War military drawdown, DoD attempted to reduce the defense infrastructure - including military bases and personnel associated with them - as it reduced the force structure. However, infrastructure reductions - which require separate actions - have lagged behind force structure reductions.

Specifically, from 1989 to 1997, the Department reduced total active duty military end strength by 32 percent, a figure that will grow to 36 percent by 2003 as a result of the QDR. In comparison, even after the completion of four rounds of base realignment and closure (BRAC), the world-wide (overseas and domestic) base structure will have been reduced only 26 percent. The reduction in domestic-only facilities has been 21 percent.

By the same token, civilian and military personnel employed in infrastructure activities have been reduced only 28 percent since 1989. The plans developed before the QDR were projected to yield a total reduction to infrastructure employment of 33 percent by 2003. These reductions will be achieved even though some critical infrastructure activities, e.g., the science and technology program and military quality of life programs, will be reduced only modestly or even enlarged.

To close the gap between force structure and infrastructure reductions and begin to reduce the share of the defense budget devoted to infrastructure, the QDR is proposing

the following four actions:

- Make a further reduction of 109,000 civilian and military personnel associated with infrastructure beyond the initiatives in the DoD budget for FY 1998. These further reductions will bring the total reduction to infrastructure employment since 1989 to 39 percent.
- Request authority for two additional rounds of BRAC, one in 1999 and the second in 2001.
- Improve the efficiency and performance of DoD support activities by adopting innovative management and business practices of the private sector. These include "reengineering" or "reinventing" DoD support functions, e.g., streamlining, reorganizing, downsizing, consolidating, computerizing, and commercializing operations.
- As a critical part of this reengineering, consider far more non-warfighting DoD support functions as candidates for outsourcing - inviting commercial companies to compete with the public sector to undertake certain support functions. DoD's experience with outsourcing thus far demonstrates that it can enjoy many of the benefits that private industry has gained from outsourcing - tighter focus on core tasks; better service quality; more responsiveness and agility; better access to new technologies; and lower costs.

REDUCING THE DOD BASE STRUCTURE

As DoD implemented the post-Cold War BRAC reductions, savings came slowly after initial up-front costs. These reductions are now about half complete. Beginning in FY 1996, DoD began to accumulate significant savings from these reductions, and the savings will continue to grow. However, the QDR found that DoD has enough excess base structure to warrant two additional rounds of BRAC similar in scale to those of 1993 and 1995. Included in our plans to reduce infrastructure through BRAC must be not only bases and other supporting facilities, but also the laboratories and test ranges which support research, development, test, and evaluation.

FIRST STEPS TOWARD REENGINEERING THE DOD INFRASTRUCTURE

Because the size of the defense infrastructure received considerable attention in the Bottom-Up Review and earlier evaluations, the QDR placed a great deal of emphasis on the operations of the Defense infrastructure. This part of the assessment was motivated by the similarity between large portions of the DoD infrastructure and business activities, and the recognition that American business practices have undergone a revolutionary transformation. The Department must adopt and adapt the lessons of the private sector if our armed forces are to maintain their competitive edge in a rapidly changing global security arena.

Defense Agency/Defense-Wide Infrastructure. Defense agencies and defense-wide activities carry out service and supply functions common to more than one DoD component. Currently, there are 24 defense agencies and about 80 defense-wide

programs. These centralized organizations and programs provide services ranging from intelligence operations to commissaries, and from health care to research and development activities. In FY 1997, defense agency and defense-wide infrastructure account for 22 percent of the Department's total infrastructure funding and employ 117,000 civilian and 128,000 military personnel.

Before the QDR, the Department had planned to reduce personnel levels in defense agencies and defense-wide infrastructure by more than 16,000 civilian and 6,000 military billets over the period FY 1997-2003, a reduction of 9 percent. The QDR reviewed all Defense agencies and defense-wide activities to determine whether they could be outsourced, reengineered, or consolidated. As a result, initiatives have been adopted that will further reduce defense agency and defense-wide infrastructure personnel and costs:

- Outsource selected Defense Logistics Agency functions, including cataloging, and increasing competition for disposal and physical distribution.
- Reengineer Defense Financial Accounting Service operations by consolidating and outsourcing accounting functions and streamlining vendor pay.
- Outsource selected patient care, medical training, and installation support in the Defense Health Program.
- Consolidate the 16 large information processing centers run by the Defense Information Service Agency into six centers.
- Reengineer business processes at the Defense Investigative Service by streamlining the security investigative process and implementing service fees.
- Combine operational commands and outsource monitoring activities at the On-Site Inspection Agency.
- Reduce funding for most other defense agencies and defense-wide activities not discussed above by 6 percent, as a down payment until a detailed follow-up review is completed by November 30, 1997.

By implementing these QDR initiatives, more than 18,000 civilian and nearly 2,000 military positions will be eliminated in defense agencies and defense-wide activities by FY 2003. Together with reductions already built into the defense budget, there will be 18 percent fewer personnel assigned to defense agency and defense-wide infrastructure activities in FY 2003 than there are in FY 1997.

Military Department Infrastructure. Most of DoD's infrastructure is in the military departments (medical and some logistics functions are the major exceptions). This infrastructure, organized along functional lines, furnishes resources for the management of defense forces, facilities from which defense forces operate, non-unit training, and personnel support. Military department infrastructure also consists of acquisition support (including science and technology efforts as well as testing and evaluation) and C4I

programs (command, control, communications, computer, and intelligence systems). In FY 1997, military department infrastructure represents 78 percent of the Department's total infrastructure funding and employs 572,000 civilian and 557,000 military personnel.

Before the QDR, the military departments had planned to reduce infrastructure-related personnel by 58,000 civilian and 20,000 military positions over the FYDP, a total reduction of about 7 percent. By adopting "best business" practices, streamlining management oversight, eliminating redundant functions, and outsourcing or privatizing where appropriate, the military departments will be able to reduce infrastructure costs and personnel further. Specific proposals include:

- Reduce logistics support costs by integrating organizations and functions (supply, financial, automated data processing, transportation, maintenance, and procurement) now being performed at multiple locations in a common geographic area. Each military department will reduce inventories and operating costs by sharing and linking consumer-level inventories and by eliminating redundant facilities and operations.
- Conduct public-private competitions for depot maintenance work that does not contribute to core capability when other appropriate outsourcing criteria are met. In addition, we will partner in-house facilities with industry to preserve depot-level skills and utilize excess capacity. Savings will be achieved as a result of these competitions and the reductions in excess capacity.
- Reduce layers of oversight at headquarters and operational commands and eliminate management and support positions no longer required because of improvements in communications and information technology. The Department will also consolidate some support infrastructure outside the United States. These actions will eliminate 10,000 military and 14,000 civilian positions.
- Compete, outsource, or privatize military department infrastructure functions that are closely related to commercial enterprises. Most of these actions involve logistics and installation support functions. The military departments expect that these initiatives will eliminate 25,000 military and 30,000 civilian positions between now and FY 2003.

By implementing these QDR initiatives, an additional 53,000 civilian and 35,000 military positions in the military departments will be eliminated by FY 2003. This translates into a 15 percent total reduction between FY 1997 and 2003 (including initiatives adopted before the QDR). There will be a slight further reduction of about 7,700 personnel by FY 2005, after all the effects of the QDR have been achieved.

CONTINUED REENGINEERING OF THE DOD INFRASTRUCTURE

The initiatives outlined above will reduce infrastructure employment by about 109,000 - about 72,000 civilian and 37,000 military positions - more than the substantial reductions already included in the defense budget submitted to the Congress in February

1997. (When the QDR initiatives are fully implemented in the years beyond 2003, the additional civilian reductions will total approximately 80,000.) As a result, by the end of FY 2003, QDR initiatives plus those actions submitted with the budget will shrink infrastructure employment to 1.2 million people, which is 39 percent below the FY 1989 level. These reductions, nevertheless, fall short of what might be achieved by comprehensively reengineering the defense infrastructure.

Recognizing the need for continued reengineering of the defense infrastructure, the Secretary of Defense has commissioned a Task Force on Defense Reform to examine the Office of the Secretary of Defense, Defense agencies, DoD field activities, and the military departments. This panel will review the history, missions, resources, operations, and requirements of these organizations in order to reengineer the way they operate. The panel will begin its work in the spring of 1997 and will report its findings by November 30, 1997.

In addition, a special study of headquarters and cross-Service occupational specialties has been initiated. This internal assessment will provide a comprehensive review of all headquarters activities (except most operational commands) and is aimed at streamlining administrative command and control operations, eliminating redundancy, and flattening excess layers of organizational hierarchy. A report and recommendations will be provided to the Secretary of Defense by August 29, 1997.

DoD also will seek legislation revoking statutory provisions that preclude actions that would lower infrastructure costs without sacrificing military capability. Viewed from an economic perspective, these statutory provisions are comparable to regulations governing private industry. The regulations on DoD infrastructure activities are not classic regulatory controls over prices or rates of return, but they are similar to regulations of airlines, railroads, and trucking companies - largely removed during the late 1970s and early 1980s - that required firms to serve some markets and precluded them from entering others.

Two sorts of statutory relief are particularly important to DoD:

- DoD needs the flexibility to reduce physical capacity through a process like the base realignment and closure legislation used to reduce excess base structure associated with the post-Cold War drawdown of U.S. forces.
- DoD is required by statute (10 USC Section 2466) to perform 60 percent of depot maintenance activities in public depots. Relief from this provision would enable DoD to contract out functions that do not support core capabilities and that can be performed less expensively by private-sector firms.

The Department faces other statutory barriers to increased use of competitive procurement of services provided by infrastructure activities. Subsequent legislative proposals will be made to allow further streamlining and increased efficiency.

THE WAY FORWARD

The most stressing requirement for the U.S. military is fighting and winning the nation's

wars. To perform this role, the Department requires robust and modern infrastructure activities. Although recent reductions will restore the Department's infrastructure to its historical proportion relative to the size of the total force, it is clear that further reductions are possible, and must be made in order to support training, modernization, and operational requirements at less cost.

Working with Congress, the Department can eliminate the inefficiencies imposed by outdated regulations and procedures and institute modern, cost-effective business practices. If we are able to do so, our support activities will greatly enhance the combat power of our forces at less cost.

[Go to Section 9](#)

[Back to Table of Contents](#)

Section IX

DEFENSE RESOURCES

The QDR included consideration of the fiscal environment in developing a program to meet the requirements of the defense strategy. Absent a marked deterioration in world events, the nation is unlikely to support significantly greater resources dedicated to national defense than it does now - about \$250 billion in constant 1997 dollars per year. Indeed, any slowing of progress in reaching deficit reduction targets could generate pressure to lower DoD spending. At the same time, DoD already faces tensions among the resource priorities within its own budget and program.

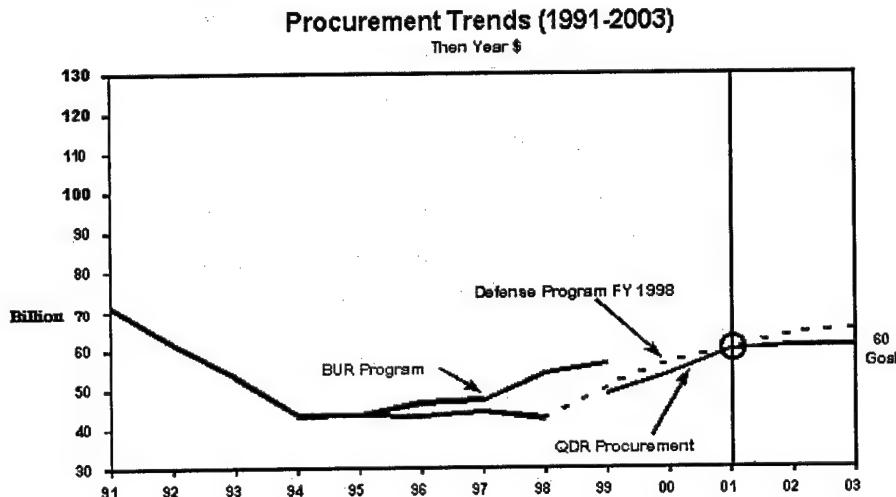
The most immediate symptom of these tensions has been the chronic migration of funds the Department had planned for procurement to operations and support (O&S) activities. More fundamentally, the financial plans underlying the Department's commitment to maintain high readiness, protect force structure, and invest in modern equipment have become increasingly vulnerable to a range of potential disruptions, some quite likely and predictable, others more uncertain. Consequently, an important task of the QDR was to determine, on the basis of the chosen strategy, where to make program adjustments that would improve the Department's financial posture. The difficulty of making these determinations mirrored the fundamental challenge of the strategy: how to strike the right balance between meeting urgent obligations in the present and investing in imperative modernization for the future.

THE INVESTMENT CHALLENGE

Fulfilling a strategy of shaping the international security environment, responding to the full spectrum of crises and aggression, and preparing now for the future require substantial and ready forces, together with a focused program of investments to improve the equipment those forces will employ. Although existing plans continue to project significantly increased funding for modernization, the Department's record of having to pay operating expenses out of funding planned for investment threatens the viability of those plans. Therefore a focus of the QDR was to build a solid financial foundation for a modernization program that could reliably support the future warfighting capabilities called for by *Joint Vision 2010*. The key to that foundation is to halt the chronic disruption to modernization plans by properly projecting and funding the Department's operating and support activities.

The \$60 Billion Goal. To modernize the force, the Department established a goal of increasing procurement funding to roughly \$60 billion by FY 2001. The Chairman of the Joint Chiefs of Staff affirmed that goal during preparation and presentation to Congress of the last two defense budgets. Although we have made some reductions in the modernization program as a result of the QDR, \$60 billion remains the rough level of procurement funding the Department believes is necessary to modernize even the slightly smaller force that will result from the QDR. On the path to that goal, the Department has established somewhat lower intermediate targets of \$49 billion in FY 1999 and \$54 billion in FY 2000. Continuing efforts to reduce the costs of the defense infrastructure will be needed to achieve those targets.

QDR Procurement Goal



The Modernization Imperative. In the years immediately following the end of the Cold War, the Department's reductions in spending came disproportionately from reductions in procurement spending, a decision that reflected a prudent, calculated risk initiated by the Administration of President Bush and continued by this Administration. This approach was possible because large quantities of modern equipment had been purchased during the 1980s and force reductions had permitted the retirement of older ships, aircraft, and armored vehicles in the early 1990s. That drawdown is now over, the dividend from procurement reductions has been spent, the procurement holiday must end, and investment in modernization needs to rebound. Otherwise, the technological superiority of our forces - and our ability to sustain their equipment stocks - will erode over time.

However, each new defense program since completion of the Bottom-Up Review in 1993 has had to postpone the previous year's plan to begin increasing procurement spending. As a result, with each successive budget, the trough in the Department's procurement plans has shifted one year into the future and the cumulative amount of procurement planned in each program has declined. For example, whereas the FYDP associated with the FY 1995 budget developed after the Bottom-Up Review had planned an increase to procurement in FY 1998 to \$54 billion, the budget submitted in February of this year requests procurement funding of \$42.6 billion. In addition, in the budgets for FY 1996-1998, there was a cumulative loss of \$18 billion in procurement funding relative to the BUR plan.

These postponements have been a reflection generally of the high priority the Department attaches to current spending on readiness. But in addition, they have occurred because our planning has not managed financial risk in a way that reflected the importance we also attach to investing in the future. As the most discretionary area of the budget within an established force and operating posture, modernization has borne a

disproportionate share of the disruptions and alterations that occur in the preparation and execution of budgets and programs. Unprotected from this pattern of migration, procurement plans most likely would continue the pattern of erosion they have experienced in recent years, and the planned increase from \$42.6 billion to roughly \$60 billion would fail to materialize.

ASSESSING RESOURCE CHALLENGES

Consequently, a principal resource management objective of the QDR has been understanding financial risk in the Department's program plans and devising approaches to manage that risk. The first step was a detailed analysis of the potential sources of instability that are built into the current FYDP, and the implications of that instability for funding requirements in the years beyond 2003. This analysis served to frame the fiscal context for making decisions in the QDR and will improve the prospects for full execution of the directions resulting from it.

The assessment focused on three sources of disruption to the Department's program plans:

- The *migration* to other accounts of funding planned for procurement during the FYDP.
- The accumulation into a "*bow wave*" of projected funding for modernization in the years beyond the FYDP.
- The *technical risk* and program uncertainty inherent in complex, leading-edge development efforts, which lead to unavoidable growth in costs and offsetting reductions in other programs.

Migration. The primary source of instability in the Department's current plans is the migration to other activities of funding planned for procurement. This chronic erosion of procurement funding has three general sources.

- *Unprogrammed operating expenses.* In the development of a new budget, unprogrammed must-pay expenses arise which displace funding previously planned for procurement. The most predictable causes of these expenses arise from underestimated costs in the day-to-day operations of the defense establishment, especially for depot maintenance, real property maintenance, military construction, and medical care. The least predictable of these expenses are for the incremental costs of unplanned deployments and smaller-scale contingencies.
- *Unrealized savings.* Migration also occurs when the savings planned to accrue from initiatives like competitive outsourcing or business process reengineering fail to achieve their expectations fully. Among the Department's efforts to accommodate a declining budget in the years since 1985 have been a great number and variety of initiatives to reduce the cost of doing the business of defense. While such initiatives have saved the Department many billions of dollars, they also introduce a significant source of instability into financial plans. Savings that fail to materialize result in unplanned expenses which must be paid from the few discretionary accounts,

principally modernization.

- *New Program Demands.* Instability also arises from changes to the Department's program plans. Important policy decisions can change our priorities in ways that require new investments where none were previously planned. An example that results from the QDR is the addition of about \$2 billion in development funding for the National Missile Defense program to support the "3+3" policy. Similarly, the Department may later need to sustain START I strategic force levels in the absence of the entry-into-force of the START II treaty. Enlargement of the NATO alliance may also give rise to new funding demands. Policy decisions like these each could cause migration of funds from procurement accounts and could displace or disrupt other investment plans.

The magnitude of financial risk associated with these sources of migration varies. Given the international security environment and strategy on which the QDR was based, the potential for at least some amount of unprogrammed costs materializing from, for example, contingency operations is high. The advent of other unprogrammed expenses, as from savings initiatives not fully realized, is much more uncertain and depends heavily on the Department's progress in more efficiently operating the defense infrastructure. On balance, the QDR proceeded from the assumption that, by the end of the current six-year plan, as much as \$10-\$12 billion per year of funding would be at risk to migration arising from unplanned bills, unrealized savings, and new program demands. Under those circumstances, procurement funding would erode from the planned level of more than \$60 billion in the FY 2001 to 2003 period, to a range of \$45 billion to \$50 billion, but no higher. Against the strategy and modernization priorities resulting from the QDR, a procurement program of no more than \$50 billion per year is clearly inadequate. Deterioration and obsolescence in equipment would erode long-term force structure and compromise the technological superiority of future forces. The concepts called for in *Joint Vision 2010* could not be realized.

To address the migration problem, the Department will redirect resources, building to about \$6-7 billion annually by the end of the FYDP, from the savings made available by trimming forces (see Section V), streamlining the infrastructure (see Section VIII), and adjusting modernization plans (see Section VII). Using these resources to program more accurately for the costs of operating the defense establishment and to hedge against the loss of the savings we expect to accrue from cost-reduction initiatives will go a long way toward breaking the pattern of erosion in our procurement plans. Although the savings identified in the QDR represent real progress in mitigating the possibility of future funding migration and will therefore substantially enhance stability of the defense program, further savings are needed to secure fully the planned modernization program.

A number of other steps can help address this challenge. Additional rounds of base realignment and closure would generate steady-state savings of up to \$3 billion per year. Deeper reductions to the defense infrastructure through more fundamental reform of these activities - a chief object of the Task Force on Defense Reform - could also generate needed investment funds in future years.

Without addressing the migration problem aggressively, there will be little margin for error in sustaining modernization plans in the face of unexpected demands for operating

expenses or other new funding requirements.

Long-Term Challenges. The first long-term challenge to the defense program is represented by potential shortfalls in minor procurement funding. A growing shortage of smaller items of equipment may in the future present a demand for unplanned expenses that are essential to maintaining the material condition and readiness of U.S. forces. Items of equipment like generators, field kitchens, and incremental modifications to electronic equipment - things essential to field operations - are being funded in current plans at levels well below their historical average. These plans may reflect a change in the traditional composition of the Services' procurement requirements. But they may also reflect a shortcoming in the Department's planning for these requirements, introducing a risk to procurement plans somewhat akin to that of unforeseen requirements for depot maintenance and real property maintenance. These additional demands may require future growth in investment funding of some \$2-3 billion per year - further strengthening the Department's motivation to generate savings in infrastructure costs and to implement acquisition reforms to minimize the cost of the equipment needed to sustain the force.

A second long-term resource challenge concerns projections of funding requirements for modernization beyond the end of the current program in 2003. As successive FYDPs reduced the amount of procurement programmed in the six-year planning period, some of these reductions have accumulated into long-term projections, creating a so-called "bow wave" of demand for procurement funding in the middle of the next decade.

This bow wave is a source of risk to the long-term affordability of the Department's modernization plans. Since the Defense budget began declining in the late 1980s, the Department has paid closer attention to this risk. Current projections indicate that the accumulation of investment funding requirements in the years beyond the FYDP could grow by several billion dollars to support projected modernization programs. Though quite modest by historical standards and affecting selected programs, this bow wave would tend to disrupt planned modernization programs unless additional investment resources are made available in future years. Some of the rationalization of out-year modernization resulting from the QDR, especially in aviation, will have the effect of flattening the bow wave - improving future affordability and therefore the stability of the overall defense program. Realization of additional infrastructure savings through fundamental reforms and base realignments and closures will also help sustain the long-term modernization of the Department's forces.

Technical Risk and Uncertainty. Complex, technologically advanced programs all bear some risk of costing more than planned. When unforeseeable growth in costs occurs, offsets from other programs must be found, which in turn disrupts the overall modernization program. Our programming process must provide sufficient flexibility in the form of program reserves to address this risk. As a result of the QDR analysis, each military department plans to establish a prudent funding reserve in its out-year plans to offset these types of cost increases and significantly reduce one of the destabilizing factors affecting our modernization programs. Additionally, the Department will select several "pilot programs" that will carry similar reserves in the budget as a means of

mitigating significant cost or schedule impacts that arise in the year of execution.

A NEW BALANCE OF RESOURCES

The program adjustments resulting from the QDR will strike a better balance in the DoD's program and financial plans between meeting the urgent obligations of the present and investing in imperative modernization for the future. Consistent with the strategy and force posture, these adjustments will provide for a more stable and sustainable modernization program into the next century. However, even after taking these steps to protect procurement plans from disruption, some potential for migration will remain. The extent to which a more stable budget and program provide predictability, which in turn helps control acquisition costs, should mitigate some of that remaining financial risk. That some potential for funding migration will remain in the defense program after implementing the QDR only serves to underscore the importance of the Department's continuing efforts to achieve fundamental reform of its infrastructure and revolutionary changes in its business practices.

In terms of its impact on resources, the achievements of the QDR will not be immediately evident in the numbers. The total funding planned for procurement will be somewhat reduced from the out-year plans reflected in the FY 1998 President's budget. However, new budget projections that result from the QDR should be both more sustainable and less vulnerable to continued migration. The true test of any financial plan is not only in its numbers, but especially in the stability and reliability of its forecasts and in their suitability to the strategy that they serve. By this measure, the QDR will prove to have made a signal contribution to the Department's stewardship of the resources the nation commits to national defense. While upholding the capability and readiness of the force, the QDR will have launched a plan to modernize for the future whose foundation is more reliable and secure.

NEXT STEPS

The QDR has made a significant effort to understand the prospective programmatic and budgetary effects of the options it considered and resulting decisions, and this report faithfully reflects the results of that effort. Now that the QDR is complete, the Department will proceed to implement the blueprint of the QDR's broad direction by engineering its details into the budget for FY 1999 and program plans through FY 2003. The full implications of the QDR on programs and budgets will reach definitive expression in the submission of a new budget and program in February 1998.

[Go to Section 10](#)

[Back to Table of Contents](#)

Section X

COMMENTS BY THE CHAIRMAN OF THE JOINT CHIEFS OF STAFF

INTRODUCTION

The National Defense Authorization Act for Fiscal Year 1997, Subtitle B, Section 923 (c), directs that the Chairman of the Joint Chiefs of Staff provide an independent assessment of the Quadrennial Defense Review to the Secretary of Defense.

From the beginning, the Office of the Secretary of Defense, the Joint Staff, the Services, and the Combatant Commanders have worked together closely to ensure an open exchange of views and the greatest possible consensus. From the beginning, as well, it was agreed that the QDR had to be based on the strategy and that all recommended changes to the force structure and defense programs had to be tested against the proposed strategy.

The recommended changes outlined in your QDR report will strengthen our armed forces and provide our nation over the long term with the strong defense programs needed to protect America's interests well into the next century. However, for the QDR to have the desired effect, we must ensure that the savings it identifies be redirected to preserve our procurement accounts, to fix recently emerging readiness problems, and to do all that is necessary to maintain faith with our people, both military and civilian.

SECURITY ENVIRONMENT

The QDR started with a thorough, collaborative analysis of the future worldwide security environment. This process developed consensus on the complex world we will deal with in the near term, and the potentially more dangerous one we will face in the future. The conclusions which emerged and which guided the development of our defense strategy have my full agreement.

STRATEGY

Today we are presented with a unique strategic opportunity. For more than 50 years we were constrained by a bipolar rivalry with a superpower adversary. To deal with such a world, we relied on a strategy of containment and designed our military forces to react in case the strategy failed. Today and tomorrow, we have an opportunity to pursue a strategy of engagement and to design a military force to help the strategy succeed.

I fully agree with the defense strategy of helping to shape the environment to promote U.S. interests abroad; of being prepared to respond with ready forces to crises from smaller-scale contingency operations to major theater wars; and of preparing now for an uncertain future.

The more effectively we shape the environment, the less often we will have to respond to near-term crises. The more effectively we prepare for the future, the less risk we will run in dealing with crises in the longer term.

I support the QDR's recommendation to retain the capability to fight and win two overlapping major theater wars. In the near term, there are two regions, the Korean peninsula and the Middle East, where our national interests are at risk. In the longer term, regardless of how these potential crises are resolved, the United States will continue to have enduring national interests in separate areas of the world. If our country wishes to remain a global power, we will have to retain the capability to fight and win in more than one region at a time. The credible capacity to do so may mean we never have to use it.

Our challenge is to balance risk between near-term requirements and the need to prepare for the longer term. We must dominate the future battlefield, where technology will change the face of warfare, as we dominate it today. We must start now to prepare for a potentially more dangerous future which promises continuing risks and challenges, including asymmetric threats such as terrorism, chemical and biological weapons, and information warfare.

FORCE ASSESSMENT

The force structure and defense program recommendations in the QDR are based on a most extensive body of analysis. In my professional judgment, the resultant force is the minimum required to execute the strategy, and further reductions in combat structure would require a reevaluation of our strategy.

The QDR reaffirmed the need to retain a nuclear deterrent based on a triad of forces, as well as to retain 10 Army divisions, 12 aircraft carriers, 20 fighter wings, and three Marine Expeditionary Forces. It reaffirmed, as well, the requirement to keep approximately 100,000 personnel forward deployed both in Europe and in the Pacific and to regularly deploy naval, air, ground, and amphibious forces around the world.

On the other hand, analysis indicated that some restructuring of the force and the end strength reductions recommended in the QDR report can be accomplished with minimal impact on the combat force.

The strategy-based force assessment fully validates the specific recommendations to reduce selected National Guard units. The Army must restructure and downsize Guard units better to reflect requirements for federal and state missions and shed force structure retained from Cold War requirements for a strategic hedge. Given today's regional threats, the strategic hedge can be reduced and transitioned into capabilities that have greater utility across the entire spectrum, and fill a long-standing void in the support structure for sustained combat operations. The QDR adjusts National Guard end strength to improve its relevance in support of the defense strategy.

The assessment validated continued support for our airlift and sealift enhancement plans, but we must solve emerging problems in en route infrastructure.

Coincident to the QDR requirement to comment on revisions to the Unified Command Plan (UCP), the Joint Staff is conducting a biennial review as required by Title 10 of the U.S. Code. The UCP review process will be complete in fall 1997. Based on the review to date, it appears that the basic structure of the UCP is sound.

This QDR assessment process has highlighted the need for better analytical models that will allow us to accurately and rapidly conduct future force requirements analysis. These analytical tools need to capture the interaction of key variables in force-on-force assessments across the spectrum of military operations, from smaller-scale contingencies through major theater war. While professional judgment will always be required to use and interpret the models, we need better tools to conduct the analytical assessments of warfighting risk.

INFRASTRUCTURE

I strongly encourage a cooperative effort by the Executive Branch and Congress to follow through on reengineering of our infrastructure. The most prudent solution to fulfilling all three parts of the strategy is to "preserve the teeth by cutting the tail." We need to get every dollar we can by reducing our infrastructure - to include committing ourselves to two BRAC rounds and the necessary changes in law to permit further outsourcing. Ultimately, we must commit ourselves to a major reengineering of our infrastructure. Without that reengineering, the pattern of the last four years is likely to continue - investment programs will be cut and the force of the future will be sold to pay current operations and support bills. In short, we will not be able to realize the promise inherent in the Revolution in Military Affairs unless we embrace the revolution in business affairs.

INVESTMENT STRATEGY

As savings are realized from our force adjustments and the infrastructure reengineering, they must be applied to preserve the key modernization programs that prepare us for the future. Our QDR assessment concludes that developments in technology and future threats will erode current U.S. dominance unless we take strong steps. We must raise the level of defense procurement in order to improve capabilities in the long term. The QDR recommendations establish adequate procurement levels in the 2001 through 2003 time frame. The QDR also concludes we should ensure long-term warfighting capability by stabilizing procurement at planned levels and appropriately funding our operations and support. In order to accomplish this, the QDR recommends accepting the risk associated with thinning our active and reserve end strength, and our civilian manpower, and by restructuring a number of our weapons programs. I concur with the recommendations.

THE FUTURE

We must take a long-term view . . . 2010 and beyond. The initiatives undertaken as a result of this QDR will provide the nation with the military capabilities it needs, while achieving greater balance in the defense program. Reengineering of the defense infrastructure must make available the resources necessary to build the force with the capabilities articulated in *Joint Vision 2010* and spelled out in the Services' visions.

The future offers us great opportunities. Warfare is changing with the growth of technological change, and we must not only stay abreast of it, but dominate it. Remarkable advances in information technology, stealth, and precision strike promise a real revolution in military affairs. But implementing the RMA will require a sustained effort, a process of balanced evolution toward revolutionary capabilities. *Joint Vision*

2010 provides a prudent vector for combining revolutionary technical advances with new operational concepts to give us a force to dominate any future battlefield.

The QDR recommendations maintain a ready force while going a long way towards stabilizing the procurement necessary to build the force for the future. This stabilized procurement presents an opportunity to synchronize the development and fielding of advanced technologies with bold experimentation in the development of future joint capabilities. The Department faces an unprecedented challenge: transforming our military capabilities while supporting our role as the world's only remaining superpower. The key will be to manage the rate of change to achieve future capabilities without degrading present readiness. The QDR sets us on the correct path.

PEOPLE

The QDR highlighted once again that our major strength is our men and women and that our highest priority must be their welfare and that of their families. We have as fine a force as we have ever fielded and it must be preserved for our nation's future. Only the highest quality, dedicated, and well trained personnel with first-class leaders will be able to succeed in the complex and fast-paced environment of future military operations. Recruiting and retaining the best people the United States has to offer, committing to their continual professional development, providing them with challenging and fulfilling careers, and ensuring their quality of life must remain our top priorities. Pay and benefits are only part of the answer. We must provide a reasonable degree of stability for our soldiers, sailors, airmen, and Marines after having committed them to operations, deployments, or hardship assignments.

I am concerned about our high operating tempo. We are beginning to understand the many complex factors that drive this tempo, from routine training to major deployments. With the Combatant Commanders and Service Chiefs, we are developing the tools to assess and manage the strain on people of training, exercises, and operations demanded by our strategy. We will continue to develop our management information and policies until we can carry out the strategy without over-stressing the force. This initiative will take the leadership and cooperation of the Secretary, myself, the Service Chiefs, and the Combatant Commanders. We have no more important task.

There are a number of actions we can and will take now to reduce the pressure on the force: we will continue to reduce the stress on especially busy units, we will trim total exercise activity, and we will lower the turbulence in deploying units.

Because the QDR recommends further personnel reductions, we must have the proper programs in place with adequate resources to carry out these reductions in a manner that honors our obligations to those who have served us so well.

SUMMARY

The Quadrennial Defense Review proposes the correct strategy to protect our interests today and into the future. It makes proper end strength reductions, program adjustments, and reengineering of our infrastructure to prudently balance near-, mid, and long-term risks.

The QDR embraces three steps in reforming our program. First, a vision; and we have one in *Joint Vision 2010*, supported by each Service's vision. Second, investment to both recapitalize and modernize the force. The QDR modernization decisions are investments in the right capabilities. Third, a stabilized future defense program so that we can execute procurement as planned. Our ability to have the resources in the long term to maintain the best military force in the world will depend to a large measure on our success in reengineering the infrastructure.

This has been a major effort. It was grounded from beginning to end, in strategy. It encouraged innovative thinking, but it set as its standard whether the recommendations will lead to a balanced, joint force best suited over the near, mid, and long term to protect America's interests. I fully support the recommendations of this Quadrennial Defense Review.

/SIGNED/

JOHN M. SHALIKASHVILI
Chairman of the Joint Chiefs of Staff

[Go to Glossary](#)

[Back to Table of Contents](#)

GLOSSARY

AGS Alliance Ground Surveillance

ARG Amphibious Ready Group

AWACS Airborne Warning and Control System

BRAC Base Realignment and Closure

BUR Bottom-Up Review

C4ISR Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CBW Chemical and Biological Weapons

CMD Cruise Missile Defense

CONUS Continental United States

CORM Commission on Roles and Missions of the Armed Forces

CS/CSS Combat Support/Combat Service Support

DTO Defense Technology Objective

eSB enhanced Separate Brigade

EXFOR Experimental Force

FAA Federal Aviation Administration

FCS Future Combat System

FSU Former Soviet Union

FY Fiscal Year

FYDP Future Years Defense Program

GATM Global Air Traffic Management

GCCS Global Command and Control System

GPRA Government Performance and Results Act

GPS Global Positioning System

ICAO International Civil Aviation Organization

IMET International Military Education and Training

JSF Joint Strike Fighter

JSOW Joint Stand-Off Weapon

JSTARS Joint Surveillance and Target Attack Radar System

LD/HD Low Density/High Demand

LMSR Large Medium-Speed Roll-On/Roll-Off

MEADS Medium Extended Air Defense System

MEF Marine Expeditionary Force

MTW Major Theater War

NATO North Atlantic Treaty Organization

NBC Nuclear, Biological, and Chemical

NMD National Missile Defense

O&S Operations and Support

OPTEMPO Operating Tempo

OSD Office of the Secretary of Defense

.L. Public Law

PDD Presidential Decision Directive

PERSTEMPO Personnel Tempo

QDR Quadrennial Defense Review

R&D Research and Development

RBA Revolution in Business Affairs

RMA Revolution in Military Affairs

S&T Science and Technology

SOF Special Operations Forces

SSC Smaller-Scale Contingency

SSBN Ballistic Missile Submarine

START Strategic Arms Reduction Treaty

THAAD Theater High Altitude Area Defense

TOW Tube-Launched, Optically Tracked Wire Command-Link Guided

UAV Unmanned Aerial Vehicle

UCP Unified Command Plan

USC United States Code